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THE

PETROLEUM AGE.

A MONTHLY MAGAZINE DEVOTED TO THE INTERESTS OF THE

PETROLEUM TRADE.

VOL. III.

FEBRUARY, 1884, TO JANUARY, 1885.

BRADFORD, PA.

McMULLEN, SNELL & ARMOR, PUBLISHERS.

1885.

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THE PETROLEUM AGE.

Vol. III. BRADFORD, PA., FEBRUARY, 1884. No. 1

THE LAW OF FORCE.

Touching the Possession of Lands.

BY WM. M. BOGGS.

THE characteristics and incidents surrounding and appertaining to the business of producing petroleum oil are of such peculiar nature that it has been long since found that the legal remedies and redresses suitable to other pursuits, were either totally inapplicable or so ridiculously slow as to be unavailable to bring the desired relief before the injury became irreparable.

In an action of ejectment the sheriff can readily stop the working of a quarry, or the carrying off the products of the soil, by the authority of a writ of estrepement, but how shall he execute the writ on a flowing oil well? Will it obey if he tell it to stop flowing? Of course the writ would not avail and its service would amount to nothing. So also of other remedies, they were found impotent and worthless. Our legislature failed to provide any adequate remedy and our courts had no jurisdiction to appoint receivers to preserve the oil produced from disputed lands to the successful litigant. The primary result of this state of affairs was that rogues took advantage of it to seize and hold lands that did not rightfully belong to them. This was notably the case with one of our corporations which rode rough-shod over the rights of all who were too weak, ignorant or timid to defend their lands from the spoiler. The second result was that it created a great tendency among producers of oil to take the law into their own hands and administer their own remedies, always in such a manner as best to conserve their own interests.

Out of all this, as a necessary sequence, grew a general belief that if once in possesion of coveted pieces of land, the oil producer could extract all the oil with impunity and leave the land valueless before the tardy operation of the law could overtake him. He well knew that at least two years must elapse before the title to the land could be tried by our Courts and that before that time the value of the land would be transferred to his pockets. If there was the slightest cloud on a title, that cloud was purchased by the wily land pirates and the land seized and held by them in defiance of law, equity and justice and often at the expense of infracting the common laws of humanity. All manner of trespasses and indignities were committed in these scrambles for possession, and at one period of the history of the northern oil field the time of the magistrates of this and surrounding towns, as well of our Court of Quarter Sessions, was taken up with actions of "Forcible Entry and Detainor," instituted by persons who had been ousted of the quiet possession of their farms. Might was made *Right*, and the weak were pressed to the wall, or if they sought to appeal to the strong arm of the law they were bought off with a pittance, and like Esau of old they took their mess of pottage and retired to another country.

The failure of those wronged to assert their rights and to bring vengeance on the heads of the offenders, has had the effect of producing on the one hand a doubt of the potency of legal redress and on the other hand, an open contempt for the laws and the Courts. Those who doubted their ultimate vindication by the law, somewhere in the womb of time, submitted to all the outrages and abuses the others heaped upon them, or weakly whined a protest that a little money always silenced. It became the popular belief that he who had a *naked* possession could withhold it by violence from him who had the *actual right* of possession, and that an *apparent* right of possession was enough to justify the employment of force in gaining possession.

Let us now consider how far the law will protect a man in using physical force in assuming and in maintaining possession of land.

The lowest and most imperfect degree of title to land consists in mere *naked* possession, or actual occupation of the estate, without any apparent right, or any shadow or pretence of right, to hold and continue such possession. This possession is good against all the world excepting him who has the *actual* right of possession, and if he neglect to assert his right, and put an end to this *naked* possession, it will by lapse of time (twenty-one years) ripen into a perfect and indefeasible title. If the occupant have nothing but a naked possession, the holder of the actual right of pos-

session, i. e. him who holds the absolute title, may treat him as a trespasser and may use enough force to expel the intruder, and if unsuccessful may appeal to the law which furnishes him with a variety of speedy remedies. Where however one is in possession of land under an *apparent* right of possession (as where he is the devisee of one who claimed a right of possession;) or where the dispute is between the holders of the legal and equitable titles; or between the holder of the legal title and one who holds an outstanding legal title, any force used in obtaining possession would be summarily punished by the Courts, for him who it is sought to oust has his constitutional right of trial by jury, which cannot be supplanted by force. In any of these cases, however, if he who seeks to gain the possession succeeds in doing so without a breach of the peace, he may defend it even against the one he has ousted. Not so where the possession is a scrambling one.

On the other hand, the law will shield one who is in possession under an actual or an apparent right, when he uses force to defend his possession. His land is, in the contemplation of the law, even if not in fact, surrounded by a fence, and he may recover damages against any one who enters on his land without his permission, no matter what may be the pretext. His dwelling house is his castle, and he who seeks to enter it by night, or day, with evil intent, is at his mercy. The law protects the possession of one until another can show a better right of possession. No exact rules prescribing the extent to which one might go in using force to defend his house and lands are found in our *laws*, excepting those relating to theft and burglary. By the Roman law of the twelve tables, a thief might be slain by night with impunity; or even by day, if he was armed with any dangerous weapon. At Athens, if any theft was committed by night-time, it was lawful to kill the criminal if taken in the fact. So also the Jewish law, which punished no theft with death, makes homicides justifiable in case of nocturnal house-breaking. Our English ancestors perpetuated this doctrine by passing in 1533, the statute 24, Henry VIII. Chapter 5, enacting that: "If any one attempts a robbery or murder of another, or attempt to break open a house, in the night-time, or to burn it, or attempt to break open a house in the day-time with intent to commit a felony, and shall be killed in such attempt, the slayer shall be acquitted and discharged." This law was simply declaratory of the natural law of self-defence in so far as it applied to defending the possession of property against intruders who contemplated the commission of theft or other crime. The unwritten law as fully justifies one who has the actual or apparent right of possession in defending his house at all hazzards, and in defending his lands he can use justifiable force. He may meet force with force, but his conduct must be in reasonable accord with self-defence. No rule can be laid down to guide the holder of lands in the use of force in defending it, for each different set of circumstances may justify a different measure of force. If unable to expel the invader by the use of such force as the circumstances will justify, he may prosecute him for "forcible entry and detainor," and the law will punish the offender. In an action of trespass (*quere clausem fregit*) also, damages may be recovered for the unlawful entry, as well as for all actual injury done.

In Pennsylvania the action of ejectment is almost the only remedy for the recovery of lands and it being an equitable action here, affords such ample relief for the rightful owner, that it will be found difficult to justify a forcible seizure of lands, unless the title of the occupant be simply and solely *naked* possession of brief duration.

FOIBLES OF BRADFORD AS SEEN BY A CRANK.

A person on first setting foot in the city of Bradford would see but little to remind him that it is a centre of one of the great mining industries of the world. The town is full of bustle, and is perhaps a little loud in its demonstrations, but nothing more. Those peculiarities, both of features and of dress, which proverbially belong to miners, are not conspicuous here. The men are a little larger than average, especially those who have come up from the ranks, and you may occasionally notice that heavy roll of the shoulders which bespeaks muscular development, but if you look for that over sanguine temperament which feeds on hope (hope often outrageously deferred) and dwells in hollow cheeks and a far away look of the eye, as a rule you will not find it. Either cheek abounds in Bradford, or else the fashionable style of hats, reduced to the last limit of littleness, gives the appearance of it. There seems to be no lack here. And furthermore, that pride of class which delights in distinctiveness of dress, is wholly wanting. In the early days, on Oil Creek this was different. There men high up in the thousands wore the broad-collared flannel shirts and

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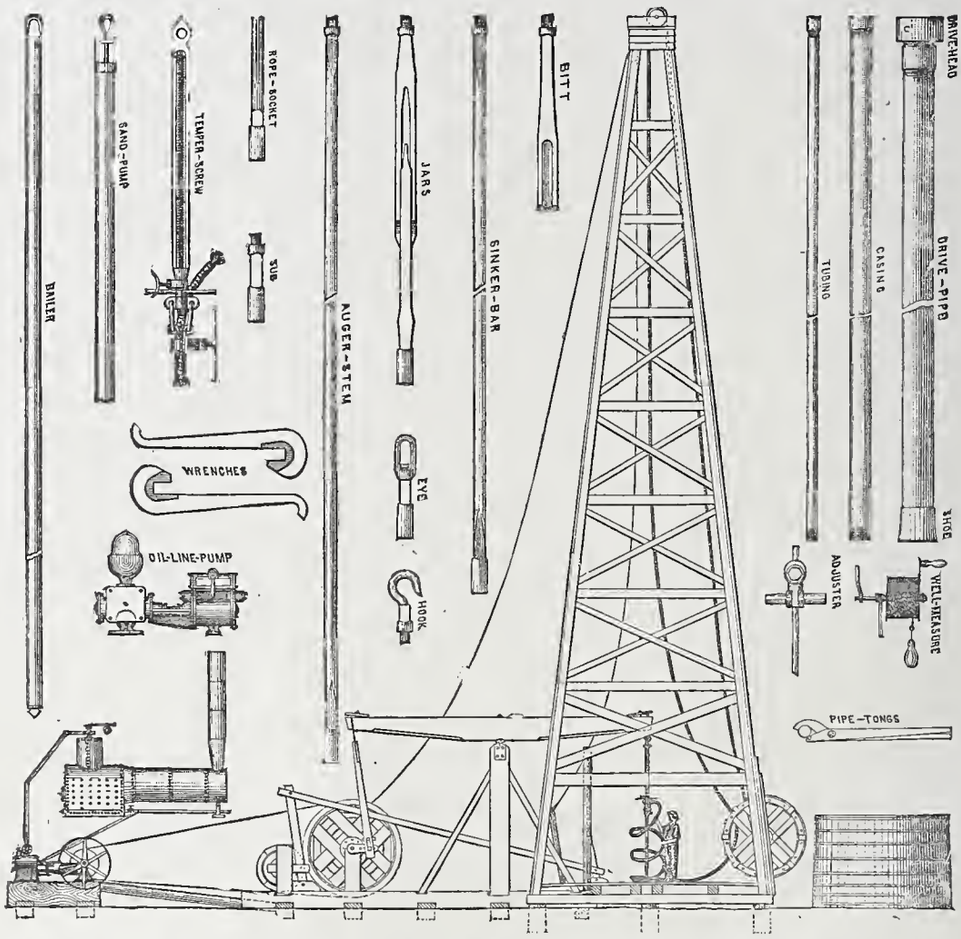

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E. T. HOWES, Treasurer, BRADFORD.
KENTON CHICKERING, Secretary, OIL CITY.

the high-top boots with apparent pride, and the spatterings of the sand-pump or the odor of oil were counted no offense. But in Bradford they all dress like gentlemen, and "the smell of the oil" would be a worse criticism than it used to be to the old Greek writers. Miners, as a rule, are long-haired, but here many of them are sheared to the very scalp both summer and winter. It is safe to say no shorter haired class can be found outside the penitentiary. This may be to cover incipient baldness, perhaps protection from the scalper, or possibly they feel like Samson, "Cut off my hair and I shall then become like any other man." At all events the family resemblance is wanting.

But when I sit down and talk with them I find myself in a miner's atmosphere. Stories of wealth, rapidly acquired, fill the air. Money, money and oil, oil, on every hand. I hear accounts of every great well from the days of Moses down; and statistics, endless statistics, overwhelm me. If I ask for the evidence of this prosperity I am pointed with pride to the two exchanges with their eight hundred members, to the six railroads, bringing in their thirty trains of passengers a day; to the ten churches, the free reading room, the two theatres, and a hundred other, more or less, laudable places of resort. "But have the boys got the money?" "Why, the producers are not all rich, but the market has been ruling low for a long time; it is now only $1.15, but $1.50 oil is close at hand, perhaps $2.00. It will go up sure. The great McKean field is being rapidly exhausted; no other such field can ever be found. Geographically, there is no such extent of land untested where oil is possible, and geologically the limit is narrow where the sand-rock storehouse, intercalated within the generating shales, exists at the proper depth for profitable oil fields. As the sand-rock dips at a nearly uniform angle to the southwest, it soon becomes too deep in one direction, and rises too near the surface in the other. Our McKean County sand-rock lies in the happy medium, but it is all drilled over. What is left of it is but odds and ends. The market must go up."

I listen and am convinced, but behold the market declines. I watch it for a week and find it dropping off at the rate of a cent a day, and yet each day I am assured it is going right up. I find this belief in an upward trend of prices is the fundamental article of faith in the producer's creed.

Many words are used strangely hereabouts, and some of them perhaps erroneously, and it has occured to me that probably this word *up* may be among the number. They talk of going up to Custer, and up to Tarport, up to Derrick and up to Limestone. Every way out of Bradford is up. This confuses everybody, both longitudinally and vertically. My impression is that the trouble lies in the water—not that the water is not good, or that the boys drink too much of it—but that it persists in running the wrong way. No well regulated stream flows to the north. And the Tuna itself, as if guilty of a misdemeanor, stops about the Y, and dams and hesitates before starting out on its grand detour northward. And now, Mr. Editor, as local patriotism is at a premium, and congressional appropriations are in order, would it not be well to instruct our worthy representative to secure an appropriation to turn the Tuna to the south and throw it over into the Kinzua, and thus square ourselves with the world? This would bring glory to Mr. Brown, would add permanency to the industries of Bradford, and would break up this confounded confusion. Up would be up forever after.

Another peculiarity of this adventurous people is their restlessness. They have visited every mining region under the sun, and stand here ready to report. Ask of California, and the grey bearded forty-niner is here to answer. Of Sydney? the Australian of fifty-two stands forth. South Africa, in sixty-seven? The diamond miner is here; and so of all the others. They have dug gold from South America to Alaska, and have bored for oil from Russia to Peru, and though the fickle goddess has led many of them a dizzy chase, they are ever ready to enter the lists for any new thing which promises speedy returns. Every scheme finds here an advocate and an audience. Will you invest in silver in Arizona, mica in Canada, gold in North Carolina, timber lands in Washington Territory, sheep in Texas, cattle in Wyoming, or wheat lands in Dakota? The boys are always ready, and only the lack of means prevents them from taking it all in. And when I suggest that that would be a wonderful manufacturing industry, which could support all the parties concerned, both owners and laborers, in so much idleness and extravagance as I see in Bradford, and further, that any agricultural country which could do it would be such a paradise, as has not been discovered since the fall, I am interrupted with the correction, "It was in the springtime they opened up Dakota." No criticisms are in order with an over-sanguine man.

The mental proclivities of a mining people are no lack of logical coherence, but an exaggerated development of hope, combined with an active imagination. They magnify hair-breadth chances into probabilities, in the direction of their wishes, and ignore even probabilities if on the other side. They dwell on things desirable till they see them as if actually existing. They are true followers of St. Paul, though in a secular sense, for "the things hoped for" they sublimate to a real substance, and they speculate in "the evidence of things not seen." The producer without a well in the world, but hoping to have one, sells the oil which has not yet been brought to light. But not delivering the oil, (how could he?) he demands pay for storing and watching over and protecting it, the same as if he were a pipe company and held it in iron tankage. And further, that supposititious oil represents a given amount of money, and if he is to be paid for holding and guarding he should also be paid interest on the supposed value so long as he holds it for another. And thus he also becomes a banker, receiving interest as well as storage on property not held, not loaned and not existing except as may be developed in the future, and to that extent only held in trust. The speculator, not to be outdone, mounts to even sublimer heights of the imagination. He assumes to possess millions of oil, always ready for future delivery, without the risk and expense of producing it—and if oil, then also tankage—and thus he becomes entitled to full compensation for carrying actual oil in actual tanks by a mere assumption. As this oil has advantages over the real in being in no danger from lightning, and being beyond the reach of the sheriff or the tax-gatherer, it has become very popular. With so unlimited and indestructible an article we cannot fear that we shall ever want for light, at least in the Exchanges. But was there ever a bolder freak of fancy? Here is materialization surpassing Katie King's. Many have built castles in the air, but they have found them poor places of residence, but this actually furnishes the comforts and luxuries of life. There was a beautiful fiction of the Roman law which assumed that a soldier who died in battle lived forever in the service of his country; and as he never presented himself for his salary, the government logically paid it to his heirs. Our own government takes a step beyond this, assuming that a man who receives a wound in battle is thereby disabled for life. But these are mere pittances compared with the fictions of the oil men. Their's is richness unlimited.

"You may talk of the cordial that sparkled for Helen,
Her cup was a fiction—but this is reality."

Very truly yours, CRANK.

OFFICERS OF THE VARIOUS OIL EXCHANGES FOR 1884.

The following is a list of the officers of the several Oil Exchanges throughout the country, elected for the year 1884:

BRADFORD OIL EXCHANGE.

President—C. L. Wheeler; Vice-President, E. H. Barnum; Treasurer, J. M. McElroy; Secretary, L. E. Fuller. Directors—N. D. Preston, J. M. Fuller, J. E. Haskell, C. M. Dodge, H. A. Marlin, C. R. Huntley, W. R. Weaver, M. H. Mercer, W. H. Powers, John H. Dixon. Arbitration Committee—E. N. Hallock, H. S. Davis, E. P. Whitcomb, I. G. Jackson, E. H. Brady. Conference Committee—C. L. Wheeler, Jos. Seep, H. L. Blackmarr. Floor Committee—A. B. Young, F. A. Dailey, R. P. Miller.

PRODUCERS' PETROLEUM EXCHANGE—BRADFORD.

President—David Kirk; 1st Vice-President, A. C. Hawkins; 2nd Vice-President, C. H. McKevett; Treasurer, W. S. Watson; Secretary, Jay C. Fairchild. Directors—J. W. Buttery, J. H. Evans, M. Mackin, W. F. Weible, W. A. Imus, H. Sondheim, A. Leo Weil, I. H. Lockwood, E. W. Coleman, E. S. Williamson, A. C. Hawkins, C. H. McKevett, David Kirk. Floor Committee—J. S. Bell, A. L. Avery, J. W. Orr. Arbitration Committee—F. H. Matthews, F. H. Roberts, L. B. Prosser, I. Coughlin, L. Kronenberg.

OIL CITY EXCHANGE.

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NEW YORK PETROLEUM EXCHANGE.

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Election will be held May 1st, 1884.

NEW YORK M. S. AND NATIONAL PETROLEUM EXCHANGE.

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CLEVELAND OIL EXCHANGE.

President—F. H. Morse; 1st Vice-President, T. W. Evans; 2d Vice-President, D. Martin; 3d Vice-President, D. B. Smith; Treasurer, W. S. Jones; Secretary, E. W. Goddard. Directors—F. H. Morse, D. Martin, W. S. Jones, J. B. Parsons, F. A. Arter, A. E. Burt, M. G. Watterson, T. W. Evans, D. B. Smith, Daniel Shurmer, L. M. Southern, G. W. Gardner, H. C. Deming, O. G. Kent, C. A. Grasselli. Arbitration Committee—John Ingersoll, R. J. Fuller, B. Mahler, B. H. York. H. A Wright. Room Committee—M. Shaw, S. E. Brainard, S. S. Gardner.

PARKER EXCHANGE.

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Election will be held in March.

McWILLIAMS' LUCK.—A PITHOLE ROMANCE.

BY WILLIAM WILLARD HOWARD.

McWilliams was down on his luck.

I do not wish it to be inferred from this that McWilliams ever had any luck in particular, or was likely to have, as fortune's fickle wheel spun him away into the future. Neither do I wish it to be thought that he had been a victim of continuous ill-luck, for such, I feel bound to say, was not the case. His had been an indifferent, mongrel sort of luck, scarcely equal to sudden flights of reckless sublimity, nor mean enough to sink to a comforting level of actual mental misery. A positive luck of either complexion might have been consistent, but an indifferent, neglectful luck was disheartening, giving the depressing feeling that the man was not to be thought of even for a plaything of fate. For some time it has been a matter of conjecture with me whether or not McWilliams would have succeeded better in early life had he recognized the indifference of his luck and so set fate at defiance. Fate is bound to respect the man that strikes for himself, and if the battle be well fought, she will bestow upon him the sweetest smiles of her daughter Fortune.

McWilliams, unfortunately never recognized this. He had lived with the half-defined notion that fortune some day would turn in his favor, and that he would achieve enduring success without much effort of his own. He followed this belief with a singleness of purpose which, had it been applied in a more practical direction, would have brought his expectations to a realization. A blind faith in fortune or luck, even when fortune is kind, is more injurious than most people imagine. Like a young woman with a too-constant lover, fortune grows tired of her idolatrous follower and plays him scurvy tricks without limit.

Luck had played villainous pranks with McWilliams' time out of mind, and McWilliams had taken them so uncomplainingly and so good-naturedly that to all fair-minded persons it seemed a distressing case. If McWilliams had known what pranks were being performed upon the bridge of his own nose, he would have thrown the fickle flirt over his shoulder without hesitation; but he didn't know, and he kept straight along, with annoying persistence, making luck into a sort of second-hand religion. There was no missionary to convert him, and he swarmed along through early life half enveloped in a cloud of doubts and barbaric beliefs. And he was exasperatingly good-natured and courteous; almost any one might impose upon him. This was illustrated in the battle of the Wilderness, when McWilliams, after fighting with unexampled bravery at the head of an assaulting party, rushed gallantly to haul down the stars and bars that floated above the redoubt. He kept the enemy at bay with his sword, while with his disengaged hand he tried to haul down the flag. He had nearly succeeded, when some one called to him, "Let the Colonel cut down the flag!" With the instinctive courtesy of his nature McWilliams stepped aside to see his superior officer's gleaming sword sever the cord that held the flag. Of course, the Colonel got credit for the deed, while McWilliams, who had won the ground by hard fighting, was unnoticed. As I have said, almost anybody could impose upon McWilliams.

In saying that McWilliams was down on his luck, I wish to suggest that at the time at which we make his acquaintance he was in the proud condition of having been noticed (in an adverse way) by fortune. It seemed as though ill-luck having tomahawked him for his own good, had scalped him as a cure against further conceit. It was high time, evidently, that the trodden worm should turn sea-serpent and swallow its tormentor. Even a worm that has spirit enough to turn, gains the fear of some and the respect of everybody. Fate would much rather notice a spirited worm than a cowardly lion.

The favored spot at which McWilliams was down on his luck was Pithole. All Americans, and a great many foreigners, that were alive in 1865, will remember Pithole. It was at that time, and for a year afterward, the "eighth wonder of the world," an excitable, erratic city, built in a day, worshiping the green flood of petroleum that flowed up from holes in the earth and baptized in mud a fathom deep. There has been nothing like it in all the romantic history of the oil country ever since. Oil was discovered on the Holmden farm early in the year, and, before summer closed, the wooded hills upheld an eager city, third in postal importance in the great State of Pennsylvania. It rose in a night, and like its heavenly prototype, the comet, blazed forth for a brief season, and then went out. Perhaps there was a touch of destiny in the name. It was just after the war, when good names were scarce, and the new town was allowed to name itself. A natural pit, or hole, in the rocks on the summit of a neighboring mountain, furnished

material for a title, and the town, with roystering indifference, adopted the suggestion.

The day on which McWilliams admitted to his inner consciousness that he was down on his luck was January 29, 1866. It was something of a comfort to him, even in that condition, to know that fortune had deigned to notice him. He had drifted in on that stream of men fresh from the trenches of the hostile south, and, in common with his neighbors, had invested his savings in what was then mere speculation. He had leased a small tract of land on the hillside above the town, and started to drill for oil. This was in the early summer or spring of 1865. Developments in the immediate neighborhood were so uniformly successful that McWilliams was looked upon as a lucky fellow and future oil prince. From the awakening of this sentiment I date the beginning of McWilliams' run of ill-luck, for at this time he was shamefully imposed upon by a young woman in Oil City.

The young woman was good enough in her way, but her way, unfortunately, was a little out of the orthodox line. Personally, and so far as any one knew, she stood without reproach, but her ideas of life were somewhat warped. She was anxious (but, for the sake of euphemism, let us say ambitious) to get a husband. I am inclined to the belief that she did not expect to love her husband when she got him, for she had had time enough on her hands to love two or three husbands. It would have been an easy matter for her to get married had she cared less for social distinction and a future free from tradespeople's bills, but a praiseworthy desire to shine as the wife of an oil prince caused her to throw a drag net over the unsuspecting head of McWilliams. This net took the shape of a plausible argument to the effect that McWilliams' casual meetings with the young woman were compromising in their tendency, and that unless McWillams was enough in earnest to clear her name of reproach, he should leave the country until the society of Oil City forgot him. This was arrant humbug, as every liberal-minded woman in the oil country will attest; but, as I have said, McWilliams was easily imposed upon. Like a thorough-going oil man he refused to let anything stand between him and the oil well of his dreams, and in a straightforward, honest sort of way, he married the young woman out of hand.

Mrs. McWilliams ought to have been happy; but if the unsolicited testimony of disinterested witnesses may be allowed as evidence, it would seem that she was in a state of constant dissatisfaction and misery. With a wariness truly Scotch in its origin and tendency, McWilliams refused to launch into extravagance in living until the capacity of the Pithole lease should be known. This vexed Mrs. McWilliams beyond endurance, and it came to pass early in the winter, when the lease failed to produce anything but the driest kind of dry wells, that the indignant wife, declaring that McWilliams had failed in his duty toward her, left the oil country to try her fortunes elsewhere. After paying his wife's debts, McWilliams—now penniless—seated himself on a stump on the hillside above Pithole and admitted to himself, with a dull feeling of satisfaction, that he was down on his luck.

McWilliams' luck had deserted him at last! The hopeful man had waited a long time for fortune's wheel to stop in front of him; and now that it had stopped a flying spoke had knocked him down. Most strong and healthy persons will resent a blow, even from fate. With a Scotch slowness to wrath—after picking himself up and seating himself on the stump above the town—McWilliams observed that his luck had treated him cruelly. Sitting there, watching the busy wells around him, the puffs of steam that floated away like snowy banners from panting engines; hearing the rattle of machinery and the clang of busy hammers, and noting with sullen brow the prosperity of hundreds of men beside him, McWilliams gave reign to his swelling temper and with sturdy arms aimed blows at fate.

The process of it was altogether unrecognized by McWilliams. This revolt at fate was in another form, but a renunciation of a religion and the ultimate issue was neither argued nor questioned. The subtle sophistry of unknown argument within him did not find its way to his lips. So far as can be learned his utterances were emphatic and commonplace. "Well," said he, "I guess I'm pretty low down now; luck's all gone to thunder, and no mistake. Luck? To the devil with luck! Who said anything about luck? There's no such thing. Hard work makes it—hard, steady, pounding work."

The debate within him sent out no bulletins to the public for several minutes. At length, when the sun suffused his thoughtful eyes with golden radiance from the western hilltops, McWilliams roused himself angrily, and with a little "To hell with luck!" strode down to the town.

Fate must have paused in surprise to see its

grandchild, Luck, so grievously flaunted by a hitherto harmless slave. She must have respected him then, for McWilliams was beyond her power. He had taken his destiny into his hands.

The morning of the twenty-ninth day of January, 1866, saw McWilliams at work with a shovel on the edge of his lease. He was digging a water-well. "Most likely find quicksand or a coal bed here," he muttered grimly. "Drilled for oil and found salt water on the upper edge. Things seem to go by contraries with me." Luck having no connection with this well, neither quicksand nor coals were found, but water, pure, fresh spring-water, in volume sufficient to supply half the town. Later in the day McWilliams put into the well a box pump of his own manufacture, and with the help of a dozen barrels and a few lengths of two-inch iron pipe established the McWilliams' Water Works.

McWilliams was pretty low down on his luck at this time; for he was less than a hewer of wood—he was a drawer of water. In Pithole in 1865–66 the drawing of water was much more profitable than it had been in ancient Palestine. In dry months water retailed at ten cents a drink and one dollar per bucket; but in the closing days of January sixty cents per barrel was the ruling price. Even in the dry months there was little danger of a water famine, for, as the price of drinking water increased, the demand fell off to such an extent that O'Reilly, a saloon-keeper who had come to Pithole with a keg of liquor on his back and thirteen cracked glasses in his pockets, was enabled to buy a diamond pin as big as a walnut and to run as a popular candidate for mayor. At the time when McWilliams' broad back began to heave up and down with the motion of the pump-handle, water was cheap enough to drink, and yet not too expensive for an occasional cleansing of soiled linen; so that at the end of the first day's pumping McWilliams considered himself justified in looking forward to the time when he might put in a boiler and engine and a steam-pump.

At the close of the second day McWilliams was so well satisfied with his defiance of fate, fortune and luck, that he determined to quit his boarding house, and, for the sake of economy, take up his residence in an abandoned engine-house on his lease. This engine-house was all that remained of his attempt to strike oil; the derrick, boiler, engine and other machinery having been sold to pay his quondam wife's debts.

With the hands engaged in purely mechanical labor, the busy mind breaks away from the menial office of the body and soars into a world of its own. The unthinking hands plod on, the quiet eye performs its part; but the mind, roaming at its will, builds castles, towns, cities, paints pictures in bright array at close of day, until ambition, filled with light and hope, returns to cheer and soothe the wearied senses that in honest labor wore the hours away. Suddenly awakened from its lethargy, McWilliams' strong mind ran on before, and with a master hand built water works, laid lines of pipe, and poured into the owner's pockets a stream of gold. The practical outcome of this hopeful train of thought became apparent on the first day of February, when McWilliams, after working-hours, began to dig foundations for the new boiler and pump.

Those three (scape)graces, old grand-mother Fate, her world-wise daughter, Fortune, and her impulsive grand-daughter, Luck, watched McWilliams with curious attention that day. Here was a former slave, in prosperity; here was a case that demanded attention. If McWilliams, by sheer force of will and energy, could get along without them, they surely could not get along without him. They *must* get him back in some way, and with this resolve they retired to work out their plot.

The fourth day of February, 1866, will long be remembered by men that drill for crude petroleum. It was the day on which Fate shot her last arrow at McWilliams. Leaving the clumsy pump and greasy water barrels in charge of an indigent negro, McWilliams set off for Oil City to buy machinery for his new enterprise. Second-hand engines were not plentiful, but after a tiresome walk up Oil Creek McWilliams succeeded in purchasing what he wanted.

It was late in the afternoon when, on his return, he came in sight of the hills of Pithole. A towering cloud of smoke hung over the city. Holmden street was in flames. The Tremont House, the Syracuse House, the United States Hotel, the Buffalo House and the Chautauqua livery stables were great blocks of fire.

McWilliams hastened forward. His first thoughts were for his pumps and water-barrels. Of course, in their eagerness to subdue the fire the citizens would seize upon his pump and use all the water without a thought of remuneration. In hasty or careless pumping they would destroy the well or pump it dry. Panting and breathless, McWilliams looked eagerly at the burning buildings. Only a dozen or so of frantic men seemed to be near them, and no

water was being thrown on the flames. The well must have gone dry! McWilliams sat down upon a stump and groaned. Fighting against fate was a hard job after all. After a few moments he rose and resolutely pushed on toward his lease. He would know the worst. The Scotch grit in him came to the surface, and he determined, with set teeth and clenched hands, that neither fate, luck nor the devil could swerve him a hair's breadth in his purpose. He would succeed; hell itself had no power that would make him pause.

But what was this, as he climbed a slight rise of ground? Three thousand men were crowded upon his lease. Something unusual had occurred. It could not have been that the well had merely gone dry; no one cared about that. It could not have been that the negro had fallen into a quicksand and disappeared; no one cared about a white man's life, much less a negro's. What was it—what was fate's revenge?

The crowd pressed like madmen about the pump. Greasy drillers, with strong, rude motions, elbowed aside less stalwart men and trod on the toes of finely dressed speculators from the East. Small men went down like straws in the crush and were carried out half strangled. Employer fought with workman for places at the pump.

"What new misfortune is this?" cried McWilliams, as a man dashed past him.

"They pumped your well dry and—" The runner was gone before the sentence could be finished.

The well had gone dry! This was enough to start with. What next? McWilliams forced his way into the crowd with fierce energy. Men recognized him and gave him room.

The pump-handle was flying up and down like a runaway walking-beam. Then McWilliams, crowding forward, suddenly stopped. Something there—there where his eyes were chained —sent the blood back on his heart, and left his cheeks and lips like ashes. It was oil!

McWilliams' luck had run on to its uttermost limit; it had done its worst, and here was the result. McWilliams had pumped for water and found oil! The first of the wonderful surface wells of Pithole had been struck. Did McWilliams care? No; for in that trying moment, when the sun threw the radiance of that sparkling stream of oil into his staring eyes, the Scotch perverseness held its own. He had done with fate and luck forever.

"'Fore God, Massa," shouted the negro, as he caught sight of McWilliams in the crowd, "Ise po'ful glad to see you. I pump dis yer ting for de fire, an' de mo' dey frows on de mo' de fire burns."

The negro was right. It will be remembered that the discovery of the famous surface wells was due to the fire on Holmden street. In speechless amazement the firemen saw streams of water turn to fire and go blazing heavenward. When it became known that the water well on the hillside was belching forth a torrent of oil, the fire lost all attraction except to the hotel proprietors and persons financially interested. For a full description of the scene I cheerfully refer the reader to the flowing English of the Pithole *Record* of February 5, 1866.

McWilliams received this gift of fortune with sullen thankfulness; much in the same spirit as that in which an angry, willful child accepts a favor that it has fought for. He took what was given; but there was no concession in word or thought. It was a part of his resolution to take things as they come—he had already learned to part with them as they go; which was much the harder.

I need not detail the events following the discovery of the Pithole surface wells. Having served their purpose these wells fell away to nothing. They were but the heralds of that greater fall, in which Pithole itself went down into material oblivion. Flower and fern bloom and wave over its ruins now.

McWilliams sold his lease when prices sat on the very summit of their wild glory, and following the line of development into other fields bought cautiously and wisely. He gained the reputation of being a careful operator—a man who, having nothing to chance, pounded away until success, through sheer weariness, gave up her store of wealth. Fortune tried to play with him once or twice, but gave up in despair. Nothing could withstand the careful attention to detail with which he hammered away at his own chosen ideas.

Mrs. McWilliams returned with the intention of setting up a brilliant establishment. She went away again with a check for five thousand dollars in her pocket. In exchange she had given a written promise never to return. As I have suggested elsewhere, it was an easy thing to impose upon McWilliams. A month after she was lost in a storm, while on her way to Europe.

* * * * * * *

Last winter, while standing as an idle visitor

in the correspondents' gallery in the House of Representatives, at Washington, I heard a strong, steady, familiar voice deliver a speech on the tariff question. The honorable member went at his subject hammer and tongs, and by his dogged earnestness claimed the close attention of the whole house. Something in his gesture, in a forgetful moment, spun me back to the oil regions. It was McWilliams!

As he finished his speech he saw me and hastened up stairs to meet me. His grip was stronger and even more persistent than his speech.

"How's your luck, McWilliams?" I asked, when the first explosion of good-will on both sides were over.

He laughed.

"Oh, hang the luck," said he, "I never think of it. All the luck there is in life is that which you can pound out with your fist. It's hard work and plenty of it. But come down to Willard's; my wife will be delighted to see you."

"Your wife?"

"Yes; not the first one—she's in the bottom of the sea, poor thing—but Miss Child; she kept the school at Oil City, you know."

"What, the little girl from New England?"

"The same."

"You must have had luck with you there, McWilliams."

"No; not exactly. She said it wasn't luck; but that I kept at it so persistently, so perseveringly, she *had to* marry me. But come—come along."

And I went.—*The Continent.*

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to Feb. 2, for the years 1883 and 1884, were as follows:

	1884. Gallons.	1883. Gallons.
From Boston	488,016	197,192
Philadelphia	4,938,652	3,043,182
Baltimore	436,069	17,250
Richmond	....	....
Total	5,862,737	3,257,624
From New York	28,647,744	33,634,153
Total exports from United States	34,510,481	36,891,777

The appended table from the *Shipping List* gives the total exports of refined, crude, naptha and residuum from New York to foreign ports from January 1st to February 9th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
Great Britain.—London	1,808,704	4,006,644
Liverpool	....	1,585,615
Bristol	390,780	....
Ireland	752,849	786,804
Other ports	557,250	771,013
Germany—Bremen	3,678,340	4,866,380
Hamburg	2,649,297	1,752,596
Konigsburg and Stettin	....	326,503
Dantzic	....	....
Other Ports	....	....
France—Marseilles	....	....
Havre	....	....
Norway and Sweden	209,273	336,359
Russia	....	....
Denmark	83,844	181,250
Belgium	4,054,317	4,649,907
Holland	4,276,136	1,624,225
Spain	30,000	20,770
Portugal	45,000	278,172
Gibraltar and Malta	1,286,200	280,970
Italy	452,020	327,815
Austria.—Trieste, etc	449,998	558,908
Greece	....	....
Turkey in Europe	....	....
Turkey in Asia	356,010	147,180
India	588,680	....
China, Japan, etc	630,000	2,678,710
East Indies	577,000	4,110,800
Africa.—Alexandria, etc. E	131,450	131,120
Canary Islands	....	7,000
Other Ports	193,002	374,370
Australia	283,153	315,864
New Zealand	119,520	58,080
Sandwich Islands	125,100	....
South America.—Brazil	381,514	846,242
Argentine Confederation	576,540	346,750
Chili and Peru	58,250	359,000
U. S. Columbia	59,468	25,004
Venezuela	56,306	57,119
Other Ports	10,860	53,011
Central America	15,087	17,736
Mexico	89,114	148,212
British North American Colonies	74,231	125,140
Cuba	46,690	28,236
British West Indies and Br. Guiana	140,737	242,499
Other West Indies	121,065	80,618
Total . . . . . Galls.	25,357,725	32,506,622

CRUDE.

	1884.	1883.
France.—Havre	680,439	481,990
Marseilles	572,149	578,445
Bordeaux	60,390	564,889
Dunkirk	392,638	741,542
Other Ports	1,181,917	738,139
Antwerp	....	....
Bremen	....	....
Norway and Sweden	....	....
Spain	728,074	540,156
Cuba	492,361	128,824
Other Ports	1,634,246	....
Total . . . . . Galls.	5,742,214	3,773,985

NAPTHA.

	1884.	1883.
Great Britain	351,946	419,419
France	104,491	477,264
Germany	....	152,500
Other Europe	....	....
Various Ports	7,250	15,550
Total . . . . . Galls.	463,687	1,064,733

RESIDUUM.

	1884.	1883.
To all Ports	....	143,741

	Gallons.
Total Refined since January 1, actual shipments	26,771,959
do do do do crude equivalent	35,695,945
do Crude do do actual shipments	6,243,179
Grand Total Crude and Crude equivalent . . . . galls.	41,939,124
Same time, 1883	47,116,148

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, February 9th, 1884:

Ports.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	47	9	12	2	1	71
Philadelphia	7	2	.	.	.	9
Baltimore	.	.	.	.	.	.
Boston	.	.	.	.	.	.
Total	54	11	12	2	1	80

Statistical History of Balltown and Cooper Districts.

The gauges of the Balltown and Cooper districts which have been taken by the scouts since these developments became of interest are recorded below. The production of these two fields varies with the torpedoing and the completion of one or more new wells.

BALLTOWN PRODUCTION.

Date 1883.	No. Wells.	Barrels.	Rigs.	Drilling.	Total
April 28		983	10	10	20
May 8		970	...	...	18
May 11	11	1406		8	17
May 19	13	1146	7	8	15
May 25	14	1065	7	12	19
June 1	17	1689	7	8	15
June 9	17	1800	5	9	14
June 15	18	1851	5	10	15
June 22	20	2925	10	8	18
June 29	22	2499	11	7	18
July 6	23	2131	11	9	20
July 14	24	2063	7	13	20
July 21	25	2223	8	13	21
July 27	25	1983	9	14	23
August 4	31	3285	13	8	21
August 11	34	3586	12	7	19
August 17	35	4811	11	10	21
August 25	36	3328	11	12	23
September 1	37	3095	8	16	24
September 8	39	3287	11	15	26
September 15	41	4155	11	15	26
September 22	45	5086	8	12	20
September 29	48	4569	9	12	21
October 6	49	6458	12	10	22
October 13	51	4851	11	9	20
October 20	53	4517	5	9	15
October 27	55	3347	4	8	12
November 3	57	4111	3	7	10
November 10	59	3450	4	3	7
November 29	63	5007	6	4	10
December 14	63	3985	7	4	11
December 27	66	3946	3	6	9
1884.					
January 7	67	3232	2	6	8
January 11	67	3483	2	6	8
January 25	69	3367	2	5	7
February 8	71	3894	2	4	6

COOPER PRODUCTION.

Date.	No. Wells.	Barrels.	Rigs.	Drilling.	Total.
February 28	16	1599	..	..	..
March 10	22	3938	..	..	..
March 15	25	1941	..	..	..
March 21	25	1500	..	..	..
March 23	26	2403	..	..	.
March 27	27	2355	..	..	..
March 31	32	3939	..	..	..
April 11	37	4624	19	22	41
April 19	46	3234	14	28	42
April 28	47	4944	13	26	39
May 3	51	4224	..	..	..
May 11	60	4326	14	18	32
May 19	63	4632	17	22	39
May 25	68	4007	14	19	33
June 1	75	5011	13	20	33
June 9	78	4881	19	17	36
June 15	82	4140	15	22	37
June 22	85	4032	13	18	31
June 28	85	3735	15	17	32
July 6	90	3994	15	11	26
July 13	93	3306	18	11	29
July 20	97	3401	21	8	29
July 27	98	3714	17	12	29
August 4	99	3129	20	15	35
August 10	101	3250	18	17	35
August 17	102	3279	16	19	35
August 24	106	3407	14	16	30
August 31	111	3811	13	12	25
September 7	111	3066	13	15	28
September 14	116	2939	13	12	25
September 21	119	3911	11	11	22
September 28	121	3832	10	13	23
October 5	123	4142	13	11	24
October 12	125	3910	11	9	20
October 19	126	3809	7	14	21
October 26	128	3526	6	13	19
November 2	131	3831	3	14	17
November 9	134	3500	3	11	14
November 29	137	3444	4	11	15
December 14	141	3182	5	9	14
December 27	146	3082	6	6	12
1884.					
January 8	147	2782	7	7	14
January 14	148	3018	7	9	16
January 26	153	2906	18	9	27
February 8	154	3310	15	20	35

The total clearances at the New York Mining and National Petroleum Exchange for the year 1883, were 1,078,876,000 barrels.

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178

SUMMARY of United Pipe Line statements for December, 1883, and January, 1884.

	Jan. 1884. Barrels.	Dec. 1883. Barrels.
Receipts, all sources	1,528,408.66	1,679,952.46
Deliveries	1,517,829.69	1,518,998.40
Gross Stocks, end of month	35,169,769.55	35,253,282.49
Sediment and Surplus	1,888,935.58	1,966,339.04
Net Stocks, end of month	33,280,833.97	33,286,943.45
Outstanding Acceptances	27,668,523.25	28,603,136.25
Credit Balances	5,612,310.72	4,683,807.20

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for January, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of January		2,359,626.20
Quantity of crude petroleum at close of January	2,603,779.12	
Less sediment and surplus	118,612.83	2,485,166.29
Receipts during January		276,318.48
Deliveries during January		147,604.58
Outstanding certificates, accepted orders, etc.		2,044,000.00
Credit balances		441,166.29
Total liabilities January 31, 1884		2,485,166.29

DECEMBER, 1883.

		Barrels.
Quantity of crude petroleum in custody at beginning of December		2,281,070.57
Quantity of crude petroleum in custody at close of December	2,475,924.02	
Less sediment and surplus	116,297.82	2,359,626.20
Receipts during December		294,512.83
Deliveries during December		212,570.15
Outstanding certificates, accepted orders, etc.		1,907,000,00
Credit Balances		452,626.20
Total liabilities December 31, 1883		2,359,626.20

The Standard Investigating Committee held two sessions at Harrisburg on the 6th of this month. The testimony taken referred only to the subject of the taxation of corporations. The committee adjourned to meet at Titusville on the 20th instant. That being the home of E. G. Patterson and many oil magnates, and the birthplace of the petroleum industry, doubtless many interesting facts can and will be obtained there of vital importance to the committee in framing its report to the legislature.

THE PETROLEUM MARKET FOR JANUARY.

The market at the Bradford Exchange opened January 2d at 113¼, and closed on the last day of the month at 110⅞. The highest point touched during the month was 115¾; the lowest 106⅞—the range between the extremes being 8⅞ cents.

The operators who time their moves on the crude checker-board with the field outlook, found a pretext in the McKinney well for taking the bear side for one good reason. The well during the first days of its existence was rated and accepted by the trade as a well which might produce from 40 to 200 barrels. The gauge demonstrated that it was never below 450 barrels the first eight days after it was struck. It proved that the intervening space which is clearly shown in the AGE map of this issue would be productive, and the market faded with the prospects.

Soon after the McKinney well was struck, the currents of speculation and the field influences kept in unison. Barring accidents in the way of wild-cat strikes, there appears to be no reason why the price of the staple should not find a higher level than that upon which it moved during the year of 1883. Throughout the month changes were frequent enough to afford the requisite amount of mental exhilaration to those who were trying to direct the drift of the fractions.

Since New York became prominent as a centre of speculation in crude, oil region operators have been obliged to change their methods of work. The long terms, at infrequent intervals, have given way to short ones, in which large blocks are handled. The great pikers at the seaboard were manipulating the market at times on a plan which nips the slumbering boom before it has had time to shake the crude world.

There is considerable prospective work ahead, but the country to be drilled in most of the old fields is of an inferior grade. Ten-barrel territory is hard to find in the region to-day. There is a crowd eager to drill searching for it!

The clearances for January were 231,458,000 barrels more than in December. The following figures show what they were in the Exchanges at the leading speculative centres:

THE CLEARANCES.

	January. Barrels.	December. Barrels.
Bradford, Oil Exchange	177,198,000	137,962,000
Bradford, Prod. Pet.	59,968,000	54,246,000
Oil City	247,250,000	188,216,000
New York, N. Y. Pet	286,616,000	198,964,000
New York, National	149,533,000	165,958,000
Pittsburgh	200,917,000	144,678,000
Total	1,121,482,000	890,024,000

THE REFINED MARKET.

As will be seen by the official New York quotations, the price of refined was advanced one-eighth of a cent after the first week and held at 9½ throughout the month. The market in London and the continental ports was not sustained and depreciated during the last days of January. The exports of petroleum and its products from the United States from January 1 to February 2 were 2,381,296 gallons less than for the same time in 1883. The number of vessels loading and to load with petroleum at the principal American shipping ports February 9th was rather small, being 80.

From December 22, '83, until January 19, '84, the visible supply of London, Trieste and the seven continental ports was reduced 105,953 barrels.

The *Shippiug List* of February 13, says of ocean freights and the refined market: There is no improvement in the demand for petroleum tonnage, and, as the supply is liberal, rates continue depressed. For London 2s. 0½d. was accepted for a 7,500 barrel vessel; for Rouen, 2s. 7½d, for one of 6,000 barrels, and for Japan about 25 c. for a couple of case vessels.

There has been no change in the refined market, exporters showing no disposition to purchase to any extent at the prices demanded by refiners. The quotations stand 9⅝ cents for 70° Abel test, and 9⅞ for Royal Daylight for New York delivery, with the usual one-eighth of a cent off for Philadelphia and Baltimore delivery. The demand for cases continues slow, but prices remain firm on a basis of 11⅜@12⅝ cts. as to brand.

		New York. Cts.	Philadelphia. Cts.	Baltimore. Cts.	London and Liverpool. Pence.	Bremen. Marks.	Antwerp. Francs
T	1	9⅜	9¼	9¼	7⅜	8 75	22
W	2	9⅜	9¼	9¼	7⅜	8 80	22¼
T	3	9⅜	9¼	9¼	7⅜	8 80	22¼
F	4	9⅜	9¼	9¼	7⅜	8 80	22¼
S	5	9⅜	9¼	9¼	7⅜	8 80	22¼
M	7	9½	9⅜	9⅜	7⅝	8 85	22
T	8	9½	9⅜	9⅜	7⅝	8 85	22
W	9	9½	9⅜	9⅜	7⅝	8 85	22
T	10	9½	9⅜	9⅜	7⅝	8 65	21½
F	11	9½	9⅜	9⅜	7⅝	8 65	21½
S	12	9½	9⅜	9⅜	7⅝	8 65	21½
M	14	9½	9⅜	9⅜	7⅝	8 65	21½
T	15	9½	9⅜	9⅜	7⅝	8 65	21⅜
W	16	9½	9⅜	9⅜	7⅝	8 65	21⅜
T	17	9½	9⅜	9⅜	7⅝	8 55	21½
F	18	9½	9⅜	9⅜	7⅝	8 55	21½
S	19	9½	9⅜	9⅜	7⅝	8 55	21½
M	21	9½	9⅜	9⅜	7⅝	8 40	21½
T	22	9½	9⅜	9⅜	7⅝	8 40	21½
W	23	9½	9⅜	9⅜	7⅝	8 40	21½
T	24	9½	9⅜	9⅜	7⅝	8 45	21½
F	25	9½	9⅜	9⅜	7⅝	8 45	21½
S	26	9½	9⅜	9⅜	7⅜	8 45	21½
M	28	9½	9⅜	9⅜	7¼	8 35	21
T	29	9½	9⅜	0⅜	7¼	8 35	21
W	30	9½	9⅜	9⅜	7¼	8 30	21
T	31	9½	9⅜	9⅜	7¼	8 30	21

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

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SPECIAL NOTICE.

The publishers of this Magazine would respectfully announce that many subscriptions are now due, and that a speedy settlement is earnestly desired. The AGE *will continue to be sent to all who subscribed under the old management. Those who have received specimen copies are invited to subscribe. The Bradford office of the* AGE *is Room No. 3, Roberts Building, above Dow's Bank.*

THE PRODUCING REGION.

ALLEGANY FIELD.

The reign of low temperatures and heavy fall of snow shut off the supply of gas in many sections of the field which had a marked influence in shaping the oil report for the month of January. The canvas of the field gave totals more bullish than have been presented in months. During January 66 wells were completed, producing on the last day of the month, 558 barrels. Compared with the December figures, there were 43 less wells added to the finished list during January. On the first day of February there were 57 new rigs up or building, and 55 which had been standing for thirty days or more. At nearly all of this last group the drill will be started sooner or later. There were 74 wells drilling. Taking the difference between the totals there was a decrease in new operations of 25. Since the Shamrock No. 1, on lot 106, was completed, no wells have been finished in the vicinity having its producing calibre. Considerable prospecting will be done east and southeast of this well in the town of Willing. Crocker, Murphy & Cranston finished an average well in advance of developments on lot 37, Alma. About Pikeville operations are active. In the Clarksville section in the neighborhood of the Heuston & Brecht well, quantities of lumber have been hauled over the snow for the work of the future. All available figures show that the production of the Allegany field has been steadily declining since the month of October. The Allegany pipe line runs during January averaged 11,018 barrels daily. The production of the field for January was in the neighborhood of 12,000 barrels. Sucker-rod connections are being used by Farmer Dean on the flats below Richburg for pumping wells, and arrangements are being made in other sections to lift the oil to the surface. The gas is weakening and the water increasing.

THE BRADFORD FIELD.

Throughout the broad domain of the grandest field that ever contributed to the world's supply of petroleum, the drill has been urged at a pace surprising to those who do not visit the nooks and out-of-the-way sections remote from the center of trade. On the outskirts of the 75,000 acres of drilled territory in the Bradford district, operations are quite active. During January 69 wells were completed, producing on the last day of the month 628 barrels. There was but little change in the new work as the summary elsewhere will demonstrate. The figures on old and new rigs and drilling wells showed a decrease of four. The long deserted Tuna valley again resounds with the ring of the tool-dressers' hammer. Territory which was run over and neglected so long as there was something better to perforate, is now being hunted down with a keen scent by the hungry producer. The East and West branches, Four mile and Indian Creek disclose an equal volume of new work. The wells now under way about Windfall station on the K. & E. and B. B. & K. railroads will throw some light on the drift of the development which gets a fair start from the Allen & Morse well on the Widow Winchell farm. As explained elsewhere, the Bradford pipe line runs for December were reported too large by 1,290 barrels per day. Making this deduction, the December production was 34,470 barrels. The report compiled for the Producers' committee for December, 1881, by the publishers of THE AGE, made Bradford's production then 62,365 barrels. It is evident from figures published in this issue that the evanescent white sand fields can not and do not make good this difference of 27,895 barrels. A point has been reached in the yield of the Bradford district when changes on the down grade are likely to be gradual. There should be a shrinkage in production figures for the first month of the year. Away to the southwest, in the water basin of the Kinzua, several wild-cat wells are projected. Operators will seek for an extension of the Big Shanty streak, or a pool similar to the Kinzua. In the new work now under way there is to be seen the beginning of the end.

WARREN AND FOREST.

During the past six weeks the explosive white sand pools of Warren, Forest and the lower country have been the motive power so far as the field is concerned in bringing about changes in crude fluctuations. The gushers at the front still furnish a pretext for jarring the market a few notches, but their influence will be materially weakened with the onward march of crude intelligence. When the trade begins to figure on areas and the total amount of oil produced by these white sand fields, the striking of a gusher within defined limits will cease to be a picnic for what a Bradford speculator terms "freight pirates." That fine stretch of meadow land above Warren, which creeps down to the banks of the Allegheny lost its charm for a number of operators during January. Shackelton's well, on the Irvine farm and Ford, Taylor & O'Donnell's test, on the Rankin, came in dry. The Wardwell development has found a few governing points since the first of the year. According to latest reports the Union Oil Co.'s well on the Harmon lands on the eastern side of the streak or pool, is practically a failure. It was drilled through the sand on the 8th of February. There was an increase of gas and a showing of oil in the bottom of the sand. The Reed No. 6, a short distance west of Reed Nos. 3 and 4, proved to be a light producer. The distance between the Reed No. 6 and the Union well on the Harmon lands, is about 200 rods. The pool or streak now extends in a northeasterly direction about a mile, with its southern limit pretty well defined. It has not grown dangerous as the days have come and gone. The production of the Wardwell district was 360 barrels on the 6th of February. Operators are looking for an extension of the Wardwell pool to the northeast. The monthly oil report for Glade and other towns was a stand off. The wells finished and the new operations for each month being about the same. Nothing of an oily nature was discovered by the wild-catters in the northern tier of towns of the county during January. The Stillson Hill well is shut down, it is reported, above the sand level. The Munhall & Smithman well, northeast of Russellsburg, is rated with the dusters.

Clarendon and Tiona aggregates for February 1st show a decrease from that of the previous month. In these sections the wells are light but stayers. Territory in this section is being sought after more assiduously by producers who are anxious to drill.

COOPER.

In writing up the Cooper district the mind's eye scarcely wanders to the environment of Gusher City in the southwestern end of the district. At Henry's Mills the middle ground between the old Sheffield and Cooper Hill developments, the interest in the section is centered. The McKinney well was drilled deeper on the 28th of January and is reported by the scouts to have started at 55 barrels per hour. For the twelve hours ending at 5 a. m., January 29th, the well is reliably reported to have produced 440 barrels. For some unaccountable reason the well was handled and run on a Mehoopany basis by men who talk about the tone of the oil trade and frown on the tricks of the mystery men. Reliable information concerning this gusher was easily available in Titusville, but in the woods was only obtained by the scouts who kept their boots on after midnight, and extracted the latent heat from the snow drift while waiting for an opportunity for using the gauge pole. Progressive men are not expected to be consistent, consequently if a line of talk and action do not harmonize there is no cause for comment. The crude currents have set toward the McKinney well, and she is a pleasing change to her owners who are reported to have anchored $130,000 in this section. Only the triangular piece affording room for four or five wells is good of their lease and purchase of more than four hundred acres, upon which five or six dry holes or small wells had been drilled. The Porter No. 5 and the McCalmont Oil Co.'s No. 1, each a little more than one hundred rods southwest of the McKinney well, were ushered in at a gushing gait, but failed to hold out with the McKinney. Thus far it is demonstrated that the streak of regulation width passes across the gap which has seemed like a dusty barrier for more than a year. On lot 407, along its southern boundary line, John Cochran will sink a test well in search of a western and parallel streak with the old Sheffield development. This new development at Henry's Mills cannot have a length of more than a mile and four-tenths and its width should not be formidable. It will temporarily increase the Cooper production, but it might occur to the thoughtful that this connecting link has been over-sized.

The McCalmont Oil Co.'s No. 2 and H. B. Porter's No. 6 are expected to reach the sand on or before the middle of the month. So long as New York speculators sell the market on every big well struck, the oil region crowd have as a

rule found it profitable to follow suit. For the twenty-four hours ending February 8th the scouts report the one hundred and fifty-four wells of the district producing 3,310 barrels. There were fifteen rigs up and building and twenty wells drilling at that time, the majority of them being in the vicinity of Henry's Mills.

BALLTOWN.

Balltown society has missed the scout during the past three months; for he is missed if he does not frequent the places when he is not welcomed. With the exception of May, Kelly & Grandin's No. 19, the other wells were considered unimportant factors in the problem of speculation. No. 19 is seventeen rods further west on the theoretical belt line than No. 18 and fifty rods in advance of it. The sand was struck on the afternoon of the first of the month. It was white and hard, giving the water in which it was washed a milky appearance. The well was cased to a depth of 560 feet and the sand was reached at less than 1,200 feet. The production of No. 19 on the 8th of this month was 198 barrels, which was the yield of the well for the first twenty-four hours after it was shot. If the Balltown belt does not pass to the eastward of No. 19 the showing which this well made indicates that they were nearing the end of the pool. No. 20, which is forty-five rods southeast of No. 19, or at right angles to the belt line, was down 600 feet on the 8th. The Balltown Oil Co.'s No. 17, on the belt between Nos. 11 and 15 on lot 4,821, had not the slightest bearing in establishing the outlines of the field. After being torpedoed, it produced 840 barrels February 8th.

Murphy & Co.'s well on the southeastern corner of lot 731 came in dry. At least a gasser was expected, but the inflammable vapor was not encountered, sand having a thickness of from two to four feet and of poor quality was found at a depth of 1,372 feet. The drill was allowed to vibrate until a depth of 1,396 feet had been reached. The shell was black on top with a little pebble rock underlying it. The Gartlan well, on the northwestern corner of lot 3,195, one location east of the old Gartlan well or Porcupine No. 4, was completed in January and started natural at twenty barrels per day. The sand was reached at 1,536 feet and the drill stopped when it had been penetrated to a depth of fifteen feet. According to the scouts' gauges the Balltown field was producing 3,894 barrels on the 8th. Between the two last gauges eleven wells have been shot.

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to February 1st, 1884.

1882.	Ch'y Gr've. Bbls.	Cooper. Bbls.	Balltown. Bbls.	Total. Bbls.	Daily Av'ge Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
Total to Feb. '84	3,124,699	1,215,567	866,005	5,206,271	8,122

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to February 1st, 1884. It will be seen that Cherry Grove has produced 3,124,699 barrels, the Cooper district 1,215,567 barrels and the Balltown field 866,005 barrels. Up to the date mentioned the three sections which have produced such an uproar in speculative circles have a total yield of 5,206,271 barrels. When it requires more than 22,000,000 barrels of oil annually to illuminate the world, the yield of the white sand pools is a rather unimportant factor in making up the supply.

The daily average runs for the 245 days of 1882 was 9,706 barrels; that for 1883 was 7,198 barrels. The average of these pools up to February 1st, was 8,122 barrels. During the month of January the average daily runs of the Cooper tract were 2,908 barrels, while for the Balltown district the average was 2,808 barrels.

The project for uniting the two New York Oil Exchanges seems to be approaching a favorable termination. It is stated the conference committee have reached a conclusion on all points except the consolidation of the assets of the two bodies. The New York Petroleum Exchange has about $70,000 in its treasury, while the New York Mining Stock and National Petroleum Exchange has about $200,000. The two Exchanges have a membership of about 2,100, and if they consolidate will need a large building with a strong roof on it, for brokers, as a class, are not weak lunged.

JANUARY OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN JANUARY, 1884.

Allegany Field.

Scio.

Lot. Owner.	Barrels.
1, Pickering & Smith No 6 est	8
2, Pennell No 3	8
2, Mrs J G Williams	8
50, The Union Oil Co No 4	10
Wells	4
Production	34

Alma.

2, Church & Whitcomb est	10
4, Matson & Thompson No 8	10
4, Chamberlain & McConnell No 6	10
17, Carlin, Bussell & Co No 6	6
18, Manhattan Oil Co No 11	12
19, H L McMullan No 6	10
20, Willets & Lovell No 16 est	12
20, Straight & Hostetter No 10	10
20, do do No 11	10
20, Willets & Duke No 7	10
21, M Finigan & Co No 11	10
23, Dow & Browning No 5	10
24, W F Jones	10
24, Flannigan & Cheeseman No 4	15
28, Harding & Co est	5
37, Crocker, Murphy & Cranston est	10
38, E T Anderson	12
38, Weiser Bros & Walley No 1	12
38, do do No 18	12
38, do do No 19	10
39, McCoy & Weeter	12
40, A T Palmer No 6	15
66, Crawford & Co	8
87, Howard, O'Connor & Shanley est	5
100, Jacob Mosber	3
106, Dobbins & Thornton est	5
Near saw mill, Baldwin & McCoy, Weeter est	3
142, William Chambers No 2	5
Wells	28
Production	260

Wirt.

41, M C Mulken	3
50, Lester, Peters Bros & Co	gas
(Daniels) Bussell & Johnson No 4	10
57, A J Thompson	8
Wells	4
Production	21
Dry	

Bolivar.

6, Bunnell & Day No 3	10
7, McDonnell & Stitt No 4	12
7, J D Downing No 6	7
7, W & J Duke No 3	10
7, Coast & Sons No 17	10
15, Wellman, Miner & Co No 5	8
24, H M Ernst No 4	10
24, Riley Allen No 5	8
24, do do No 6	10
30, H Stewart No 1	10
31, Fisher Oil Co No 3 (Crandall)	10
31, do do No 6 Miller est	12
31, Hanley & O'Shea No 15	10
Wells	13
Production	127

Clarksville.

1, Dickinson	3
9, Childs, Hill & Co	10
12, Barton & Co	gas
Wells	3
Production	13
Dry	1

Genesee.

8, I Willets No 46	10
8, do No 50	15
14, Strickler & Co No 2	10
14, Robert Cook & Co est	8
15, McCalmont Oil Co No 26	15
15, Mervin & Co	8
21, J B Bradley No 1	10
21, M L Lockwood & Co est	5
22, I Willets No 8	6
22, do No 10	5
23, Hughes & Coughlin, No 8	6
30, McCalmont Oil Co No 20	5
Wells	12
Production	103

Miscellaneous.

Scio, Willets & Co	abandoned
Ontario, Gibbs & Thyng	dry
Wells	2
Production	—
Dry	2

Bradford Field.

East and West Branches.

Farm. Operator.	Barrels.
McKellop, McClure & Co	6
Willis, McCray Bros	6
McKenna, Logan Bros No 3	3
Kingsbury, W A Waid	4
Watkins, Bunnell & Dale	3
Renner, T T Harris	3
Bingham, G H Van Vleck No 26	10
do 168, R J Straight No 7	10
do 186, do do No 5	5
Beckwith, Beardsley & Co	5
Fox, Joseph Stettheimer No 4	5
do Caldwell, Hamsher & Co No 2	5
Dent, P C L & P Co, No 55	15
do Whitney & Wheeler No 32	20
do do do No 33	20
Lovejoy, Willoughby & Thayer No 2	8
Mack, Chapin & Co No 3	3
Paul, Bayne, Fuller & Melvin No 2	10
Freeman, Scofield & Sage	2
Kissam, Beech, Atwater & Co No 2	7
Owens' pur, Hall & Slocum, No 4	5
Reed, Bradford Oil Co	8
do do do	8
B I Taylor, Zeigler & Rischer No 5	8

Quintuple.

110, L E Hamsher	10
181, Booth Bros	8
208, W H Bradley	8
211, Joseph Barr	8
Wells	28
Production	215

Kendall Creek.

Berger, P T & W C Kennedy No 4	3
Moore, Westmoreland Oil Co No 12	8
Borden, Urquhart & Lavens No 6	8
Wells	3
Production	19

Foster Brook.

E T Co, E. T Co No 79	10
do Boyne, Penny & Coleman No 2	12
do H L Blackmarr & Jones No 11	9
do do do do No 12	15
do F W Mitchell No 8	12
do F L Blackmarr & Post No 11	15
C B & H, Coldren & Wolf No 12	8
do Northern Oil Co	8
Wells	8
Production	89

Four Mile.

Van Campen, W M Brown	10
do do	10
do do	10
do Geo Van Campen & Sons No 17	15
Zaph, Franchot Bros No 3	12
Waters, Moore & Coast No 6	5
Widow Carrol, Thomas Kerwin No 2	10
do do do do No 4	12
Moultrous, John Coast, No 6	10
Stevens, Wm Chambers No 1	6
Sparger, Chamberlain No 6	8
Garr, Tuna Oil Co	10
Stevens, Book, Rhodes & Brown	8
Wells	13
Production	126

Indian Creek.

Henry Loup, Levens & Swan No 5	6
Pine lot, R G Bailey No 9	8
Keating, J L McKinney & Co No 33	10
Indian Creek, Suhr & Justus	6
Loup, Hazelwood Oil Co No 44	8
Barse, Geo V Forman, agt U O Co, No 31	10
Keating, Forest Oil Co No 43	10
Williams, Langdon	10
J H Campbell, A J Thompson & Forest Oil Co	8
Sparger, Bradford Oil Co No 6	10
Zimmer, C Y White & McKinney No 2	3
Wells	11
Production	89

Cole Creek.

Bingham, Forest Oil Co No 32	15
do Union Oil Co No 25	20
do do do No 26	25
do 587, John McKeown No 11	15
Wells	4
Production	75

Kinzua.

Bingham, Capt. Byrom	5

Kinzua Village.

Campbell, Van Scoy & Rapp No 2	10
Wells	2
Production	15

Warren and Forest.

Glade and other Towns.

Tract. Owner.	Barrels.
Wardwell Reserve, S C Rhodes No 6	15
do do K H McBride No 4	15
Wardwell, Benedict & Robinson No 4	15
Mowris, King & Magee No 3	15
Cobham, Wm Reed No 4	25
R R Lands, Derrick Oil Co No 1,	8
Irvine, John Elliott, No 1	10
Beatty, David Beatty No 19	5
Roy, James Roy	15
Irvine, W H Shackelton	dry
Carver, Taylor & O'Donnell	dry
Wells	11
Production	126
Dry	2

Clarendon.

79, Union Oil Co No 7	6
79, J R Kuhn & Co	6
79, S S Fertig & Co No 4	6
105, R I Shugart No 6	5
106, Rockwell & Lapham No 15	6
106, C C Duffield & Co No 3	6
497, F W Pratt & Co No 7	7
557, Town Bros	6
557, R E Townsend	6
561, Rockwell & Co	6
585, Warren Gas Co	gas
591, Markham & Taylor	5
Wells	12
Production	65
Dry	1

Tiona.

109, J S Patterson No 3	7
159, Fertig & Henne No 5	8
164, Hill & Powell No 1	8
165, do do No 6	6
165, J S Patterson No 9	6
200, Wesley Chambers No 3	7
205, O'Donnell & Co No 5	8
Wells	7
Production	50

Cooper District.

Henry lands, Anchor Oil Co No 33	20
do McCalmont Oil Co No 6	5
do do do No 18	100
Williams, McKinney	500
Cooper Hill, M W S & Co No 29	40
438, Shank & Emery No 4	100
Henry lands, Syndicate No 11	75
Wells	7
Production	840

Balltown.

3194, Porcupine Oil Co No 16	50
3194, do do No 17	100
3195, Gartlan	15
731, Murphy & Co	gas
Wells	4
Production	165
Dry	1

Miscellaneous.

Pleasant township, 449 Chapin & Co	dry
Elk township, 5540 Munhall & Smithman	dry
Eldred do 79 Falconer	dry
Conewango township, 318 Dr Hunter	dry
Wells	4
Dry	4

Lower Country.

Venango.

Farm. Operator.	Barrels.
Boyle, Roess Bros	8
Cubbison, do	3
Hughes, Richardson & Williams	16
Barber. Judd & Lewis Bros	dry
Rembold, Dale & Smullin	300
do Woods & Graham	dry
Algeo, Lee & Swan	5
Fish, Warner & Co	dry
McBride, W Hulings	7
Long, Myers & Co	2
Horse Creek, M J Long	dry
Hughes. Fisher Bros	5
Rembold, Dale & Smullin	75

Emlenton.

Mitchell lot, Hamilton & Co	10
Kreis, S Kreis	8
Mackin, N Mackin & Co	9
Middleton, Emlenton Gas & Fuel Co	dry
Catholic church lot, N Mackin & Co	7
S Crawford, S Crawford	12
Kuhns, Cooper & Co	13
McCullough, Porterfield & McCombs	6
B Russell, Baum & Co	4
Blymiller, L M Hall	dry
Moriarty, Moriarty	6
Engle, Engle & Co	7
Wells	25
Production	503
Dry	6

Clarion.

Alt, Alt Bros	6
Sweitzer, Bartlett & Co	10
Updegraff, Jennerette Bros	5
Fenton, Wm Fenton	8
Wells	4
Production	29

Butler.

Renfrew, Phillips Bros	20
McCalmont, Phillips Bros	100
Martin, Showalter, Bros & Hartman	15
Byers, Stephens & Co	dry
Hilderbrand, Hilderbrand Oil Co	5
Thompson, Hyland & Co	10
McKeever, Reed, Sutton & Hydrick	15
Wells	7
Production	165
Dry	1

DRILLING WELLS, RIGS UP AND BUILDING FEB. 1.

Allegany Field.

Scio.

Lot. Owner.	Depth.
2, Waco Oil Co (old)	rig
2, Coast Oil Co No 28 (old)	rig
2, do No 29 (old)	rig
2, do No 30 (old)	rig
2, Farrel & Snyder (old)	rig
3, Coyle & Co (old)	rig
4, Charles Taylor (old)	rig
4, Minnow Oil Co No 4 (old)	rig
4, do do No 5	rig
11, R Carrol No 4 (old)	rig
11, Griffin & Co	700
11, Lowcomer & Turner (old)	rig
11, Duke & Norton Oil Co No 3	drilling
12, Allen & Morse No 1	700
12, do No 3 (old)	rig
50, The Union Oil Co No 5	drilling
New rigs	1
Old rigs	11
Drilling	4
Total	16

Alma.

1, Phillips Bros No 10 (old)	rig
1, do No 11	rig
2, Church & Whitcomb	rig
4, Crane & Co (old)	rig
4, Matson & Thompson No 9 (old)	rig
4, Chamberlain & McConnell No 7	800
17, Carlin, Bussell & Co No 10	100
17, Col Scott No 5	rig
17, New Milford Oil Co No 4	200
17, do do No 5	rig
18, Manhattan Oil Co No 12	sand
18, do do No 13 (old)	rig
Applebee	100
19, HL McMullan No 7	100
20, Willets & Lovell No 17	rig
20, do do No 18	rig bldg
20, Straight & Hostetter No 12	100
20, Willets & Duke No 8	100
21, Finigan & Co No 10	100
21, do No 12 (old)	rig
23, Dow & Browning No 6	rig
24, Vance & Horton No 9	1000
24, do [old]	2 rigs
24, do	rig
24, Sutherland & Co No 4	300
24, Flannigan & Cheeseman No 5	1000
24, do do No 6 [old]	rig
24, do do No 7	rig
24, F H Parkman	600
28, Noble & Co	rig bldg
New Milford Oil Co	rig
38, E T Anderson & Co No 5	500
38, do do do No 6	300
38, do do do No 7	rig
38, Koch Bros No 3	500
23, do No 3	800
38, Weiser Bros & Wally No 2	300
38, do do No 4	600
38, do do No 5 (old)	rig
38, do do No 6	rig bldg
38, do do No 7	rig bldg
38, do do No 10	rig
38, do do No 20	500
38, do do No 22	rig
38, do do No 23	rig bldg
38, Preston Bros	800
39, McCoy & Weeter	300
40, A T Palmer No 5	800
40, do No 7	100
40, do No 8 (old)	rig
71, Willets (shut down)	sand
88, Duke & Co (old)	rig
107, Ira W Shirley	600
124, L Willets & Co	drilling
142, Bolivar Oil Co No 2	1000
142, do do No 3	rig
142, Elliott & Co	800
142, Willets & Duke No 3	200
142, do do No 4	rig
142, do do	rig bldg
142, William Chambers No 3	rig bldg
143, I W Shirley No 14	1600
Pikeville, Harkness	100
New rigs	21
Old rigs	11
Wells drilling	32
Total	64

Wirt.

33, Wellman, Miner & Fuller	rig
33, do do	rig bldg
—, Nile, Nile Oil Co No 3	150
25, Fertig Bros No 2	rig
58, Lester & Jordan No 1	rig
52, [Isaiah Jordan] Lester & Jordan No 1	rig bldg
Smith & Bartlett	1000
New rigs	5
Wells drilling	2
Total	7

Bolivar.

6, Murphy, Fiskel & Co	700
6, Star Oil Co	1350
6, I Collins No 3 (old)	rig
6, A P Tanner No 1	rig
7, J D Downing No 7	sand
7, do No 8	500
7, W & J Duke No 4	700
7, do No 5	rig
7, do No 14	800
7, Coast & Sons No 18 (old)	rig
7, do No 19 (old)	rig
7, do No 20	rig bldg
7, do No 21	100
7, do No 22	800
7, do No 23	1100
7, do No 25	rig bldg
7, do No 28	rig bldg
7, Montgomery & Stitt No 4	550
7, Coast & Lego No 4	700
7, do No 5	rig
7, A A Hopkins No 16 (old)	rig
8, Empire Gas Co No 1	1400
14, A L Robertson & Boggs [old]	rig
15, do do do No 3	200
Irvine & Morgan	400
15, Wellman, Miner & Smith No 6	drilling
15, do do do No 7	drilling
15, do do do No 8	rig bldg
15, do do do No 9	rig bldg
16, Empire Gas Co No 2	rig
24, H M Ernst No 5	rig
24, Riley Allen No 7	100
23, Johnson & Conroy No 5	600
23, do do No 7	900
23, do do No 8	rig bldg
30, H Stewart No 2	rig bldg
31, Hydrick No 3	900
31, Fisher Oil Co Henry No 8 [old]	rig
63, H F Northrup	1300
63, Whitney Bros No 8	rig
63, do do No 9	rig
New rigs	14
Old rigs	6
Drilling	21
Total	41

Clarksville.

3, Empire Gas Co No 1	500
3, Canfield & Nutting	100
9, Heuston & Brecht No 4 (old)	rig
9, Merritt & Co [old]	rig
9, Childs, Hill & Co	rig
9, H Werthman No 6	rig bldg
10, do do No 1	rig bldg
10, Whipple Bros No 6	rig
10, do do No 7	rig bldg
13, J R Goldsborough	rig
13, Cuba Gas Co	rig
17, William Cranston No 6	rig
18, Mohan Oil Co No 6	500
18, McKelvy & Co	800
New rigs	8
Old rigs	2
Wells drilling	4
Total	14

Genesee.

7, Rollin Dow	100
8, I Willets No 48	100
8, do No 51 (old)	rig
8, do No 52 (old)	rig
8, do No 53 (old)	rig
8, do No 54	rig
14, Chauncey Oil Co No 16 (old)	rig
14, Durkee & Co No 5	600
14, Empire Gas Co (old)	2 rigs
14, Robert Cook & Co	2 rigs
15, McCalmont Oil Co No 31	900
15, do do No 32 (old)	rig
15, do do No 20 do	rig
15, do do No 21 do	rig
15, do do No 22 do	rig
15, do do No 23 do	rig
15, do do No 24 do	rig
22, I Willets No 9	rig
22, do No 11 (old)	rig
22, do No 12 do	rig
22, do No 13 do	rig
22, do No 14	rig
23, Hughes & Coughlin No 9 (old)	rig
23, Emery Oil Co No 9	1000
23, do No 10	700
23, do No 11 (old)	rig
23, do No 12 do	rig
Champlain, Emery Oil Co No 6 [old]	rig
23, McCalmont Oil Co	200
29, N C Clark [old]	rig
29, William Cranston [old]	rig
30, Davis & Co [old]	rig
31, Hugh McMullan (old)	rig
31, do do do	rig
38, C E Young & Co [old]	rig
New rigs	5
Old rigs	25
Drilling	7
Total	37

Miscellaneous.

Franklinville, Franklinville Co	drilling
Wellsville, Palmeter & Co	rig
Tioga county, [Gains] Baldwin & Co	drilling
Willing, lot 62 O'Connor & Co	rig
do lot 73 James Thornton	600
do lot 78 O'Donnel & Co	rig bldg
Shingle House, Doyle & Co	drilling
New rigs	3
Old rigs	
Wells drilling	4
Total	7

Bradford Field.

East and West Branches.

Farm. Operator.	Depth.
McKellop, McClure & Co (old)	rig
Beardsley, Bronson & Curtis (fishing)	800
Miller, J W Sherman	250
Watkins, Bunnell & Dale	rig
Clark, Chapin & Chapman	rig
Yeomans, Westmoreland Oil Co, No 1	300
Bingham, G H Van Vleck, No 24 (old)	rig
do do No 27	200
do do No 28	rig
do lot 168, R J Straight No 8	rig
do lot 152, Forest Oil Co No 11	250
do lot 178, F W Andrews No 10	200
Jewett, Hamsher, Weaver & Co No 9	50
Dent, P C L & P Co No 56	sand
do do do No 57	600
do do do No 58	100
do do do No 59	rig
do Whitney & Wheeler No 34	1500
do do do No 35	200
do do do No 36	rig bldg
do do do No 37	rig bldg
do Emery Oil Co No 22	50
Brown, Murphy & Co	200
King, Murphy & Co (old)	rig
Owens Purchase, Hall & Slocum	rig bldg
Taylor, Atlas Oil Co No 7 (old)	rig
Hawkins, P C L & P Co and P T Kennedy	rig bldg
do Union Oil Co No 13 (old)	rig
Craft, Roy & Archer No 9	1000
N W M Co, Union Oil Co No 19	750
Lovejoy, Willoughby & Thayer No 3	400
do do do No 4	rig bldg
Kissam, Beach, Atwater & Co No 3	700
do do do No 4	rig bldg

Quintuple.

25, E Strong & Co No 2 (old) . . . . . rig
44, J W Humphrey (old) . . . . . rig
50, B F Brinton No 3 (fishing) 700
83, Pat Newell . . . . . drilling
161, W H Bradley 600
196, Boggs & Sterrett . . . . . rig bldg
225, Vera & Farner . . . . . rig
284, Splain & McDonald 1300

New rigs 13
Old rigs 7
Drilling 22
Total 42

Kendall Creek.

Moore, A S Palmer No 7 700
Storms, Wright . . . . . rig
Bradley, Zane & Taylor No 10 . . . . . drilling
do S. S. Fertig . . . . . drilling
Melvin, P C L & P Co No 79 . . . . . sand
do do . . . . . rig
Shedd, P O Buchanan 500
Chamberlain, Thompson & Lane No 6 (fishing) 1000
Chamberlain, Thompson & Lane No 7 [old] . . . . . rig
E T Co, Forest Oil Co No 29 200
Bingham, Mina Oil Co . . . . . rig
Borden, Roth & Peffer No 16 100
do Urquhart & Lavens . . . . . rig bldg
do Bryan, Hopkins & Co . . . . rig
do Bradley & Co No 7 . . . . . drilling
Duke, Suhr & Shopperle . . . . . drilling
Duke, Charles Duke [old] . . . . . rig
Norton, Dan Clark [old] . . . . . rig

New rigs 5
Old rigs 3
Drilling 10
Total 18

Foster Brook.

E T Co, Boyne, Penny & Coleman No 3 1600
do do do No 4 800
do do do No 5 rig
do H L Blackmarr & Jones No 13 . 1000
do do do . . . . 3 rigs
do F L Blackmarr & Post . . . . . sand
do do do . . . . . 2 rigs
do A E Jones [old] . . . . . rig
do do do . . . . . rig bldg
Willets, I Willets No 27 [old] . . . . . rig
do do do . . . . . drilling
do O Smith . . . . . drilling
C B & H, Vandergrift & Miller . . . . drilling
do F A Smith . . . . . drilling
do Charles Wilder . . . . . drilling
do J D Wolf 850
Wilcox, George Corson 100

New rigs 7
Old rigs 2
Drilling 11
Total 20

Four Mile.

Van Campen Wm M Brown 700
do do 400
do do 100
do do . . . . . 3 rigs
do Geo Van Campen & Sons No 18 . . . . . rig
do Geo Van Campen & Sons No 19 . . . . . rig
do Geo Van Campen & Sons No 20 . . . . . rig bldg
do Nelson & Jones No 3 . . 900
do Wm Doe 100
do do . . . . . rig bldg
do G L Watson & Co No 1 rig
do Booth, Bovaird & Seyfang . . . . . rig bldg
do Adams, Carson & Co . . rig
do do do do . . rig bldg
do Tarbell & Co . . . . . rig
do do do . . . . . rig bldg
Zaph, Franchot Bros 400
do do 600
do do 100
do do . . . . . rig bldg
Waters, Carrol Bros No 2 (old) . . . . rig
Widow Carrol, C J Hickey 200
do Thomas Kervin No 3 . . 1000
do do No 5 . . rig
do Collins (old) . . . . . rig
Moultrous, John Coast No 7 600
do do do No 8 . . . . . rig bldg
do do do No 9 . . . . . rig bldg
Stevens, William Stevens No 2 900
do do do No 3 . . . . rig
do William Burns & Co . . . . . rig
do William Chambers No 2 . . . 200
do do No 3 . . . 50
do do No 4 . . . rig bldg
do William Burns & Co . . . . . rig
Sparger, Chamberlain No 7 . . . . . rig

Carrol, D W Ward 600
Stevens, Jefferson Varney (old) . . . . rig
Nessell, Burns & Co [old] . . . . . rig
Stewart, E M Johnson . . . . . rig bldg

New rigs 23
Old rigs 4
Drilling 15
Total 42

Indian Creek.

Henry Loup, Levens . . . . . rig
Pine Lot, R G Bailey No 10 [old] . rig
do do No 11 [old] . . . rig
do do No 12 [old] . . . rig
Shattuck, Emery Oil Co 600
Loup, Hazlewood No 45 1000
do do No 46 [old] . . . . rig
do do No 47 . . . . . rig
Barse, U O Co (G V Foreman agent) 400
do do do . . . rig
do do Sloan & Son 400
do do Bussell & Co . . . . . rig
North Branch, J D Downing [old] . . . rig
do do [old] . . . rig
Keating, Forest Oil Co No 44 100
Elling, do do No 2 1000
Hamlin, Miller & Odell No 2 100
do Boyne & Co 900
J H Campbell, A J Thompson & F O Co 100
Curtis W L, Riley Allen 100
Curtis J J, Morse & Brown . . . . . rig
Hartsone, Morse & Allen 300
Dodge, Shear Bros No 4 300
do do do No 7 . . . . . rig
Loup, Keystone Gas Co 1000
Sparger, Bradford Oil Co No 4 . . . . rig
do do do No 5 . . . . rig bldg
do do do No 8 1500
do do do No 9 400
Zimmer, Shear Bros No 1 . . . . . rig
do do No 2 . . . . . rig
do do No 3 . . . . . rig
do C Y White & McKinney No 3 200
do do do do No 4 rig
Dean purchase, Bradley, Curtis & Dean 100
Widow Rixford, White, Douglas & Co rig
Simms, Bovee & Duck 900
Morse, Morse & Allen . . . . . rig bldg
Weston, Ramsey . . . . . rig bldg
Campbell, Waugh & Bligh . . . . . rig
Keating, J L McKinney & Co No 29 . 1400
do do do do No 30 . rig
Weston, do do do No 34 . 1100

New rigs 17
Old rigs 6
Drilling 20
Total 43

Cole Creek.

Rew, Capt E Frawley (old) . . . . . rig
Bingham, Forest Oil Co No 33 . . . . rig
do Union Oil Co No 27 . . . . drilling
do do No 28 . . . . rig
do do No 29 . . . . rig bldg
do 418 Forman & U O Co No 22 1300
do 495 do do No 1 rig
do 494 do do No 11 rig bldg

New rigs 5
Old rigs 1
Drilling 2
Total 8

Kinzua.

Bingham, Union Oil Co No 44 . . . . . sand
do do No 49 1250
do do No 50 1000
do do No 51 1000
do do No 52 . . . . . rig bldg
Bingham, 129, P T & W C Kennedy . 1200
do H P Malone 1500
Butts, Mumford & Shehan 700
Hoop, J M Tait . . . . . sand

Kinzua Village.

Campbell, Porter & Conley [old] . . . . rig
Falconer, Book & Gartlan No 3 600

New rigs 1
Old rigs 1
Drilling 9
Total 11

Warren and Forest.

Glade and Other Towns.

Tract.	Operator.	Depth.
Wardwell, Benedict & Robinson No 5		450
do do do No 6		rig
Mowris, King & Magee No 4		100
Cobham, Wm Reed. . . No 5		300
do do . . . No 6		500
do do (old) No 7		rig
do do No 8		rig
Railroad lands, Derrick Oil Co No 2		rig

Harmon, Union Oil Co 400
Meashon, Anchor Oil Co No 4 1000
do do do No 5 . . . . rig
McNally, Steelsmith . . . . . rig
Stewart, Wesley Chambers No 1 . . . 300
do do do No 2 . . . rig
J Roy, Calhoun & Co . . . . . drilling
Irvine, John Elliott No 2 350
Cogswell, Law & McKelvy . . . . . sand
John Hahn, Wesley Chambers . . . . rig
Overly Heirs, do do No 2 . . 350
do do do do No 3 . . rig bldg
Branch, S C Rhodes (old) . . . . . rig
Beatty, David Beatty No 20 250
Sweating, Magee & Smith . . . . . rig
Magee, Magee, Hertzell & Nesmyth . rig
Leonhart, David Beatty No 3 . . . . . sand
Davis, Davis Bros No 5 450
Schofield, A H Daniels. . . . . rig
Eichoff, Eichoff 400
McWilliams, C A Campbell 150
Ammon, North Warren, Morck & Becker . . . . . rig bldg
Roy, James Roy . . . . . rig
Uhl, Johnson & Co No 2 . . . . . sand
Hodge Run, Bennett . . . . . rig

New rigs 14
Old rigs 2
Drilling 17
Total 33

Clarendon.

Lot.	Operator.	Depth.
53,	Stonehill, Union Oil Co	800
54,	D Beatty (old)	rig
55,	D Beatty & Son No 30	sand
55,	do do No 31	rig
55,	do do No 32	rig
465,	J Smith & Son No 9	200
465,	do do No 10	rig bldg
	Fred Hughes & Co	rig
495,	W Benedict No 11	sand
495,	do do No 12	rig
496,	Riddlesperger & Co	900
79,	Union Oil Co No 8 (old)	rig
80,	Thayer & Crosby No 5 [old]	rig
105,	F W Pratt No 1	rig
106,	C C Duffield & Co No 4	rig bldg
106,	R I Shugart No 3	rig
106,	Story & Adams	500
107,	Soult & Dower	100
496,	Mattison & Co	1000
497,	Mooney & Griffin No 3	rig bldg
497,	F W Pratt & Co	rig
497,	C C Duffield & Co	rig
526,	F G Keatley No 1	100
527,	S C Rhodes No 6	rig
527,	Rockwell & Co No 2	rig
494,	Kemp & Solliday	rig
497,	Romain No 5	sand
497,	do No 6 [old]	rig
530,	Whitehill & Porter No 4	rig
555,	O'Donnell & Mitchell	rig
529,	Beecher & Copeland	rig
531,	C A & D Cornen No 1	rig
556,	do do No 7	rig bldg

New rigs 19
Old rigs 4
Drilling 10
Total 33

Tiona.

Lot.	Operator.	Depth.
83,	Clark & Foster	rig
103,	Fertig & Henne No 7	sand
109,	J S Patterson No 4	rig
109,	Little Toby Oil Co No 7	100
109,	Short, Oyster & Short No 2	rig
110,	Fertig & Henne No 4	sand
110,	do do No 5	750
110,	do do No 6	rig
110,	do do No 7	rig bldg
110,	do do No 8	rig bldg
159,	do do No 10	800
159,	do do No 5	sand
164,	Helm & Mealey, old	rig
165,	Wm Pagett No 11	900
159,	Mandell Oil Co No 2	sand
159,	do do No 3	rig bldg
161,	A & S Short No 2	100
160,	J S Patterson No 11	sand
160,	do do No 12	1100
160,	do do No 13	1000
160,	do do No 14	800
160,	do do No 15	rig
165,	Gerner Bros	rig
165,	C H Coffin & Co No 2 [old]	rig
165,	Hill & Powell	rig
200,	Wesley Chambers No 1	rig
200,	do No 2	sand
200,	do No 4	rig
204,	Dr Dunn & Co [fishing]	500
611,	[Cherry Grove] Forest Oil Co No 16	800
611,	do do do No 17	rig

New rigs 13
Old rigs 2
Drilling 16
Total 31

Cooper District.

Tract.	Operator.	Depth.
Heury lands,	Syndicate No 14	drilling
do	do 15	rig
do	McCalmont Oil Co No 19	100
3198,	Clark, Foster & Murphy No 5 [old]	rig
3198,	Clark, Foster & Murphy No 6	rig bldg
Cooper,	M W S & Co No 30	sand
do	do No 31	rig
do	do No 32	rig bldg
Lot 438,	Shank & Emery	rig
do	do do	rig bldg
Henry,	H B Porter No 5	1100
do	do No 6	200
do	do No 7	rig bldg
do	do No 8	rig bldg
do	do No 9	rig bldg
do	do No 10	rig
do	[West Porter] McCalmont Oil Co No 1	1400
do	McCalmont Oil Co No 2	500
do	do do No 4	rig bldg
439,	do do No 5	rig bldg
439,	do do No 6	drilling
439,	do do No 7	200
439,	do do No 8	rig bldg
439,	do do No 9	rig bldg
439,	do do No 10	rig bldg
439,	do do No 11	rig bldg
Williamson,	John L McKinney & Co	2 drill'g
do	do do	3 r bldg
407,	John Cochran	rig
369,	J M Clapp & Co	drilling
Clapp pur,	J M Clapp No 3 [old]	rig

New rigs 20
Old rigs 2
Drilling 12

Total 34

Balltown.

Lot.	Operator.	Depth.
5236,	May, Kelley & Grandin No 19	1100
5236,	do do No 20	100
5236,	do do No 21	rig
5236,	James Welch & Co No 5	400
3194,	Porcupine Oil Co No 18 (old)	rig
4821,	Balltown Oil Co No 17	sand
4821,	do do No 18	sand

New rigs 1
Old rigs 1
Drilling 5

Total 7

Miscellaneous.

Brokenstraw Township,	lot 233, Murphy & Co (shut down)	1200
South Valley Township,	lot 35 Vandergrift & Co	sand
Garland,	Dude Oil Co	drilling
Warrant 5134,	Forest Co P M Shannon & Co	800
Scott Run,	Irvineton Campbell	rig
Pleasant Township,	Benedict & Curtis	rig
Warrant 5104,	Forest Co. Syndicate No 1 (shut down)	600
Warrant 5104,	Forest Co Synd. No 2	rig
Lot 152,	McKean, G H Dimmick	drilling
Ridgway,	Ridgway Gas Co	drilling

Rigs 3
Drilling 6

Total 9

Lower Country.

Venango.

Farm.	Operator.	Depth.
Hughes,	Fisher & McLaughlin	rig bldg
McCalmont,	Richardson & Co	rig
Briery,	Richardson & Williams	250
Wolfe & K,	Wolfe & Kugler	200
Tract 47,	Fisher Bros	200
Kaufman,	P H Judd & Co	rig bldg
do	A P Dale	rig
Flinchbaugh,	Dale Bros No 18	400
do	do No 19	200
McKinley,	Trax & Cramer	900
Rembold,	Woods & Graham	100
do	Dale & Smullin	rig bldg
McCalmont,	McCalmont & Co.	500
Rembold,	Dale & Smullin	150
McCalmont,	Unknown (old)	rig
do	McCalmont & Co	700
Paget,	Fisher Bros (old)	rig
Diamond,	Loots & Co	drilling
Oberley,	Oberley & Co.	sand

Vicinity Emlenton.

Gates,	A D Gates	250
Truby,	J O Truby	100
McComb,	King Bros & Heeter	100
do	do do	rig bldg
Schmuck,	A Schmuck	rig
Scott,	Barnard & Scott	rig bldg
Leslie,	Stevens	rig
Smith,	C Weible	300
L Sloan,	Unknown	rig bldg
Gosser,	Crawford & Son	150
Haggerty,	E Goodrich	rig bldg
Nelson,	J J Nelson	100
McCullagh,	Porterfield & McCombs (old	rig
Weller,	J Weller (fishing)	500
do	do (old)	rig
do	do	rig
Foster,	Foster	sand
Royal,	Grant & Co	sand
Hunter,	Weaver & Co	drilling
Weller,	E Goodrich (old)	rig
Fox,	Martin	100
Crawford,	Flynn & Mackin	rig bldg

New Rigs 13
Old Rigs 5
Wells drilling 23

Total 41

Clarion.

Mehrton,	F J Harley	sand
Fillman,	J Fillman fishing	1150
Delo,	G P Delo	rig bldg
Keating,	William Seber	800
Berlin,	J C Bartlett & Co	sand
Johnson,	J Johnson	rig bldg
Lehigh,	Pye & Co	sand
Berlin,	Bartlett & Co (old)	rig
Graham,	W Berlin	rig

New Rigs 3
Old Rigs 1
Wells drilling 5

Total 9

Butler and Armstrong.

McCalmont,	Phillips Bros No 4	sand
Wallace,	A Shidemantle. No 3	sand
do	do No 4	sand
do	do No 5 [old]	rig
Kaltenbach,	Forest Oil Co	900
Huselton,	Baldridge Oil Co	950
Allshouse,	Forest Oil Co.	500
Gillespie,	Westerman Bros	sand
Kamerer,	W S Williams (fishing)	750
Vosbrink,	Showalter Bros & H [old]	rig
Mulligan,	McGuire & Co	600
Campbell,	Denison & Hoyt [old]	rig
Wid McCray,	Hunter & Cummings	rig bldg

New Rigs 1
Old Rigs 3
Wells drilling 9

Total 13

On the northwestern corner of warrant 5,134 Shannon & Co. are drilling a test well with the hope of encountering a pebble sand laden with crude. The Cornwall wells on this warrant disclosed sand and traces of oil. The well has a good geographical range southwest of the Cooper tract.

The Calhoun well on the Roy property, warrant 5,545, northeast of the Wardwell development, will be an important test in deciding the value of lands in this section. At last accounts it was shut down on top of the sand. The Anchor Oil Co. and Steelsmith are getting ready to drill at locations between this well and the Wardwell pool.

The scouts are again found in camp on the winding Tionesta. P. C. Boyle has returned from Macksburg, Sam Watson foregoes the allurements of Olean society and Hughes, Rathbun, Cappeau, Tupper and Tennent, all old timers, now show their appreciation of developments in Forest and Warren counties by keeping close watch on the experimental wells in the white sand region.

The Syndicate Oil Co.'s No. 2, on warrant 5,104 of the Funk lands, 1,000 feet north of No. 1, and on the same side of the north branch of Salmon Creek, has passed below the level of the Clarion county sand without disclosing any traces of oil.

The fact that the Henry's Mills' gushers need shooting before they are two weeks old, might be regarded as a bullish feature. Perhaps it is the scrabble for oil, instead of the wrecking of the crude currents, which hastens the use of the explosive compound.

According to "Ind. B." a cement for fastening brass upon glass is obtained by first making a resin soap, by boiling 1 part caustic soda and 3 parts resin in 5 parts water, and then kneading the soap with one-half its weight of gypsum. This cement, when used for fastening the brass burners upon the glass portion of a kerosene lamp, holds very firmly. It hardens in a half or three-quarters of an hour, is not penetrated by the petroleum, and resists the heat very well. By adding zinc white, white lead or lime, the hardening of the cement is retarded. The cement is only superficially attacked by water.

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	DECEMBER, 1883. Wells.	Prod'n.	Dry.	JANUARY, 1884. Wells.	Prod'n.	Dry.
Scio	12	107	.	4	34	.
Alma	36	325	1	28	260	.
Wirt	6	65	.	4	21	1
Bolivar	26	221	.	13	127	.
Clarksville	4	38	.	3	13	1
Genesee	19	197	.	12	103	.
Miscellaneous	6	.	6	2	.	2
Total	109	953	7	66	558	4

BRADFORD FIELD.

Division of Field.	DECEMBER. Wells.	Prod'n.	Dry.	JANUARY. Wells.	Prod'n.	Dry.
E. & W. Branches	28	228	3	28	215	.
Kendall Creek	10	86	.	3	19	.
Foster Brook	10	88	1	8	89	.
Four Mile	14	122	1	13	126	.
Indian&Meeks Cr'ks	16	137	.	11	89	.
Cole Creek	8	132	.	4	75	.
Kinzua	4	30	.	2	15	.
Total	90	823	5	59	628	.

WARREN AND FOREST.

District	DECEMBER. Wells.	Prod'n.	Dry.	JANUARY. Wells.	Prod'n.	Dry.
Glade	12	84	2	11	126	2
Clarendon	16	153	1	12	65	1
Tiona	9	57	2	7	50	.
Cooper	7	395	.	7	840	.
Balltown	3	440	.	4	165	1
Miscellaneous	.	.	.	4	.	4
Total	47	1129	5	45	1246	8

LOWER COUNTRY.

District	DECEMBER. Wells.	Prod'n.	Dry.	JANUARY. Wells.	Prod'n.	Dry.
Venango	13	60	4	25	503	6
Clarion	1	2	.	4	29	.
Butler and Armstrong	10	143	.	7	165	1
Total	24	205	4	36	697	7

GRAND SUMMARY.

District.	DECEMBER. Wells.	Prod'n.	Dry.	JANUARY. Wells.	Prod'n.	Dry.
Allegany	109	953	7	66	558	4
Bradford	90	823	5	69	628	.
Warren and Forest	47	1129	5	45	1246	8
Lower Field	24	205	4	36	707	7
December Total	270	3110	21	216	3139	19
January Total	216	3139	19			
Difference	54	29	2			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	JAN. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	4	9	8	21	1	11	4	16
Alma	35	6	36	77	21	11	32	64
Wirt	3	.	5	8	5	.	2	7
Bolivar	21	5	18	44	14	6	21	41
Clarksville	6	2	4	12	8	2	4	14
Genesee	17	15	11	43	5	25	7	37
Miscellaneous	3	.	3	6	3	.	4	7
Total	89	37	85	211	57	55	74	186

BRADFORD FIELD.

Division of Field.	JAN. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches'.	22	3	32	57	13	7	22	42
Kendall Creek	9	1	7	17	5	3	10	18
Foster Brook	10	1	10	21	7	2	11	20
Four Mile	14	3	18	35	23	4	15	42
Indian Creek	19	2	17	38	17	6	20	43
Cole Creek	3	1	5	9	5	1	2	8
Kinzua	3	1	7	11	1	1	9	11
Miscellaneous	.	.	.	.	.	.	.	.
Total	80	12	96	188	71	24	89	184

WARREN AND FOREST.

Division of Field.	JAN. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	11	2	21	34	14	2	17	33
Clarendon	16	3	20	39	19	4	10	33
Tiona	16	5	14	35	13	2	16	31
Cooper	6	.	6	12	20	2	12	34
Balltown	2	1	5	8	1	1	5	7
Miscelllaneous	1	.	1	2	3	.	6	9
Total	52	11	67	130	70	11	66	147

LOWER COUNTRY.

Division of Field.	JAN. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	13	.	27	40	13	5	23	41
Clarion	1	.	9	10	3	1	5	9
Butler & Armstrong	5	.	16	21	1	3	9	13
Total	19	.	52	71	17	9	37	63

GRAND SUMMARY.

Field.	JAN. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	89	37	85	211	57	55	74	186
Bradford	80	12	96	188	71	24	89	184
Warren & Forest	52	11	67	130	70	11	66	147
Lower Country	19		52	71	17	9	37	63
Total Jan. 1	240	60	300	600	215	99	266	580
Total Feb. 1	215	99	266	580				
Difference	25	39	34	20				

R. W. Carroll, representing the American Tube and Iron Co., and the Ball Engine Co., has recently changed his office from Richburg to Bradford, and is conveniently located in room 12 Schonblom block, opposite the Oil Exchange.

Royce & Brundred are constructing a two-inch line in the Macksburg field. They have located a 2,000 barrel tank just above the village. The wells in the Macksburg field will be connected up and the oil run into this receiving tank and then shipped by rail via. the Green Line, of which W. J. Brundred is the General Agent.

Logan, Emery & Weaver, at their Southwark Refinery, make a specialty of manufacturing high test illuminating oils and naptha for export and home trade. The senior member of the firm, Mr. A. H. Logan is a refiner of long experience, and gives the details of the business his personal attention. The other members Hon. L. Emery, Jr. and W. R. Weaver, with their well known business push and large capital combine to make the Southwark Refinery one of the leading manufactories of the country. Their office is at 319 Walnut street, Philadelphia, the refinery being located at Greenwich Point, on the Delaware river, with ample facilities for shipments by vessel and rail.

Table of Daily Averages in Barrels, of Runs, Shipments, Charters and Exports—1870-'83.

1870.

	Runs.	Shipments.	Exports.
January	11287	11643	. .
February	11714	11176	. .
March	11299	11432	. .
April	12294	13000	. .
May	13211	13159	. .
June	13731	13950	. .
July	13735	13248	. .
August	16776	16666	. .
September	18462	18073	. .
October	18171	17989	. .
November	16953	17326	. .
December	15178	14322	. .

1871.

January	13497	14119	8901
February	13306	12418	8862
March	12914	12384	7450
April	12866	12971	8742
May	13187	18947	12502
June	13678	16725	12058
July	14725	17456	18930
August	14922	17106	16109
September	15398	18702	15544
October	15653	16294	13012
November	15487	16032	15341
December	15418	13256	8142

1872.

January	18825	15387	10015
February	15965	14557	7368
March	14890	8910	5145
April	15403	14283	9355
May	17326	16468	8783
June	16871	17640	13185
July	16702	19071	16781
August	17739	20065	17532
September	16681	18053	14847
October	4272	19790	17409
November	21287	15931	11419
December	20825	13962	11525

1873.

January	20407	18488	8133
February	21725	18837	9657
March	21461	21560	11577
April	21384	23606	20341
May	25044	24770	16676
June	26449	23213	26867
July	27983	26272	21000
August	30198	27890	23073
September	31809	31765	22915
October	30403	32698	25894
November	33049	31986	20232
December	34980	30980	16892

1874.

January	37653	27215	15894
February	29839	17900	12324
March	28498	16717	12027
April	25958	26780	14150
May	28895	29001	18841
June	30725	27180	24488
July	33337	30336	28309
August	30049	25606	24915
September	28021	33819	24490
October	29669	17526	16632
November	28702	18203	13910
December	27682	19450	15549

1875.

January	27489	14035	10152
February	25708	11706	8065
March	25469	22385	13086
April	22502	24319	15604
May	22468	21344	18672
June	23207	24899	21137
July	25431	29100	26799
August	23186	28443	23837
September	23298	36979	28091
October	23583	28125	18433
November	23340	22369	18606
December	23254	28125	16504

1876.

	Runs.	Shipments.	Charters.	Exports.
January	23,418	21,848	19,678	15,712
February	23,478	18,542	7,043	17,058
March	23,105	20,231	12,478	9,230
April	23,625	20,101	15,133	13,510
May	24,293	20,844	18,952	15,628
June	24,992	30,728	29,204	17,732
July	26,404	39,630	26,375	28,256
August	27,995	38,819	35,549	28,036
September	28,509	38,485	20,426	30,269
October	27,582	16,909	10,107	19,629
November	28,061	29,049	34,867	14,570
December	26,699	38,483	25,755	28,249

1877.

	Runs.	Shipments.	Charters.	Exports.
January	28,910	24,081	11,297	15,920
February	29,181	15,925	10,550	13,435
March	30,886	29,438	14,578	18,094
April	32,400	30,032	29,658	23,188
May	35,453	40,191	33,931	29,715
June	37,665	46,375	35,481	35,330
July	38,875	35,654	32,781	32,781
August	40,894	46,916	27,027	35,703
September	39,722	53,074	29,703	32,674
October	39,548	41,168	31,792	30,189
November	38,747	41,571	16,326	19,628
December	40,309	18,625	11,424	19,628

1878.

January	34,863	24,803	18,531	13,843
February	40,200	27,754	10,740	13,137
March	41,737	24,441	19,240	16,010
April	42,099	28,242	16,240	21,130
May	39,766	29,965	27,129	22,183
June	40,466	29,384	31,283	27,877
July	44,982	41,816	45,900	28,473
August	43,800	53,277	37,709	40,965
September	45,031	50,961	37,096	45,753
October	46,874	56,077	22,022	42,925
November	44,825	42,960	28,587	24,842
December	37,244	32,207	18,724	25,499

1879.

January	45,977	21,238	14,800	15,514
February	43,480	25,324	12,192	19,257
March	48,641	32,863	28,006	18,673
April	51,133	37,992	25,256	26,509
May	53,249	44,408	32,861	26,661
June	54,262	44,792	48,730	34,132
July	54,424	51,743	35,961	47,574
August	62,149	57,832	38,616	37,992
September	63,888	53,723	47,143	44,417
October	60,925	51,133	44,674	46,907
November	60,387	47,634	46,283	32,024
December	64,093	48,632	31,287	46,159

1880.

January	67,750	52,403	18,303	36,337
February	62,952	47,707	22,996	25,785
March	67,326	51,071	18,954	24,635
April	68,147	27,172	12,483	17,849
May	59,176	28,439	18,375	15,033
June	70,231	25,302	38,843	24,726
July	71,207	33,672	35,419	31,646
August	71,253	43,033	30,270	42,059
September	68,032	41,180	33,566	35,791
October	70,445	53,739	17,809	31,973
November	67,858	40,567	21,746	18,925
December	70,062	43,097	20,425	24,311

1881.

January	66,101	34,701	20,153	16,080
February	70,781	31,968	30,952	24,816
March	77,554	33,171	28,431	31,686
April	80,621	45,101	32,002	27,947
May	83,684	50,651	51,890	33,600
June	88,184	50,227	50,634	62,613
July	87,503	62,918	62,924	41,800
August	91,864	72,338	44,411	63,309
September	84,603	71,777	64,061	49,493
October	88,545	67,791	32,144	48,925
November	76,603	66,563	34,844	48,390
December	81,786	64,235	42,106	37,562

1882.

January	73,769	56,679	34,495	29,543
February	83,547	63,853	43,098	33,869
March	83,732	55,858	41,565	37,211
April	81,125	57,471	33,442	44,887
May	86,957	59,794	47,109	48,468
June	95,786	74,383	54,494	68,775
July	104,306	77,940	33,984	64,660
August	105,825	66,527	38,069	41,025
September	96,541	66,928	42,121	37,040
October	85,840	67,979	30,145	33,780
November	74,589	48,321	49,054	38,113
December	72,419	36,432	42,890	25,623

1883.

January	65,125	43,813	23,023	32,493
February	65,208	44,352	25,618	36,651
March	64,404	52,737	32,093	30,230
April	69,207	63,612	40,345	43,677
May	69,445	61,411	49,458	57,463
June	70,443	58,259	46,448	38,674
July	65,628	52,722	39,634	47,344
August	68,877	67,306	49,409	44,471
September	66,210	77,582	46,929	52,994
October	67,649	71,621	44,747	47,900
November	65,281	68,829	25,301	43,728
December	62,830	56,434	29,286	27,583

A postoffice has been established at Gusher City, with Mr. J. H. Broas, jr. for postmaster. The postoffice name is Cooper Tract, Forest county, Pa. It has a daily mail.

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, DECEMBER 1883.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., FEB. 5, 1884.

CUSTOMS DISTRICTS.	MINERAL CRUDE.		NAPHTHAS.		ILLUMINATING.		LUBRICATING AND PARAFFINE OIL.		RESIDUUM.		TOTAL.	
	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.
Boston & Charlestown, Mass.	.....	....	874	125	611,091	69,740	7,546	2,853	252	52	619,763	72,770
New York, N. Y.	4,366,123	349,951	1,182,755	71,122	20,604,667	2,002,257	702,672	150,956	345,492	26,376	27,201,709	2,600,662
Philadelphia, Pa.	1,044,899	70,783	146,147	8,220	7,027,069	709,181	139,334	27,850	.....	....	8,357,449	816,034
Baltimore. Md.	.....	....	.....	....	1,283,360	117,611	.....	....	.....	....	1,283,360	117,611
San Francisco, Cal.	.....	....	7,320	1,486	14,530	2,872	828	670	.....	....	22,708	5,028
All other districts.	102	15	3,950	444	85,217	12,455	150	37	.....	....	89,419	12,951
Total for Dec. 1883.	5,411,124	420,749	1,341,046	81,397	29,625,934	2,914,116	850,560	182,366	345,744	26,428	37,574.408	3,625,056
Total for Dec. 1882	3,415,376	277,242	1,226,090	93,423	24,404,479	2,286,051	955,732	281,722	199,962	14,476	30,201,639	2,952,914
Total for 12 months, ended Dec. 31, 1883	59,018,542	4 439,117	17,365,314	1 195,035	440,139,326	39,468,879	10,108,394	2 193,245	6,502,524	465,350	533,134,100	47,761,626
Total for 12 months, ended Dec. 31, 1882	45,011,154	3 373,302	16,969,839	1 304,041	428,424,581	37,635,981	8,821,536	2034.487	4,265,352	275,263	503,492,462	44,623,074

THE CRUDE MARKET FOR JANUARY, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Bradford. Highest.	Bradford. Lowest.	Bradford. Closed.	Oil City. Opened.	Oil City. Highest.	Oil City. Lowest.	Oil City. Closed.	New York. Opened.	New York. Highest.	New York. Lowest.	New York. Closed.	Pittsburgh. Opened.	Pittsburgh. Highest.	Pittsburgh. Lowest.	Pittsburgh. Closed.
T	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
W	2	113¼	114¾	112⅞	114¾	113¾	114¾	112⅞	114¾	113⅜	114¾	112⅞	114⅝	113¼	114⅝	113	114⅝
T	3	115⅛	115½	114⅞	115	115	115⅝	114¾	115	115⅛	115⅝	114¾	114⅞	114⅞	115½	114¾	114⅞
F	4	115	115	114⅛	114¼	115¼	115¼	114⅛	114¼	115	115	114⅛	114⅛	115⅛	115⅛	114¼	114¼
S	5	114½	114¾	114⅜	114⅜	114¼	114¾	114¼	114⅜	114½	114⅞	114⅜	114⅜	114¼	114¾	114¼	114½
M	7	114½	115¾	114½	115	114½	115⅝	114½	115	114⅝	115½	114⅝	115⅛	114½	115½	114½	115⅛
T	8	115¼	115½	114⅞	114¾	115¼	115½	114⅝	114¾	115½	115½	114⅝	114⅞	115¼	115½	114⅞	114¾
W	9	115	115	113½	113¾	115	115⅛	113⅝	113⅞	115	115	113½	113¾	114⅞	115	113⅝	113¾
T	10	113⅞	114	112¾	113	114	114⅛	112¾	112⅞	113½	114	112⅞	112⅞	113⅞	114	112⅞	112⅞
F	11	113	113¼	111⅛	111¾	112⅞	113¼	111⅜	111¾	112⅞	113⅛	111⅜	111¾	112⅞	113	111⅜	111¾
S	12	112⅜	112⅜	111¼	112¼	112⅛	112¼	111¾	112¼	112	112¼	111¼	112¼	112⅛	112¼	111¼	112¼
M	14	112⅜	112⅜	109⅜	109⅞	112⅜	112⅜	109⅜	109½	112⅜	112½	109½	109½	112¼	112⅜	109⅜	109½
T	15	109¼	109⅜	107⅜	107⅜	109½	109½	107⅝	107¾	109¼	109⅜	107⅝	107⅞	109¼	109⅜	107¾	107¾
W	16	107	110	106⅞	110	107¾	110	107½	109¾	107¼	109⅞	107⅛	109¾	107½	109⅞	107⅜	109⅞
T	17	110	110⅝	107⅞	107⅞	110¼	110⅝	108	108	110¼	110½	108	107⅞	110¼	110½	108	108⅛
F	18	108½	109¾	107¾	109½	108½	109¾	107⅞	109⅝	108½	109¾	107¾	109⅝	108⅜	109¾	107¾	109⅝
S	19	109¼	109⅜	107⅞	108	109½	109½	107⅞	108¼	109¼	109⅜	108	108¼	109½	109½	108	108¼
M	21	108⅜	108¾	107⅜	108½	108½	108⅞	107⅝	108½	108⅝	109	107⅜	108½	108¼	108¾	107½	108⅝
T	22	108¼	109¼	107½	108⅛	108½	109¼	107⅞	108⅜	108¾	109¼	107⅝	108⅜	108½	109⅛	107⅝	108⅜
W	23	108⅛	110¼	108⅛	109½	108½	109¾	108½	109⅞	108½	110	108⅜	109⅞	108½	110	108⅜	109⅝
T	24	109¾	110⅜	109½	109⅞	109¾	110½	109⅞	109⅞	109¾	110½	109¾	109¾	109½	110½	109½	109¾
F	25	110⅛	110¾	109⅞	110¼	110⅜	110⅞	110⅛	110⅜	110¼	110⅞	110⅛	110⅛	110⅛	110¾	110	110⅜
S	26	110⅝	111½	110⅜	110⅞	110¾	111½	110¾	111	110⅞	111½	110⅝	111	110½	111½	110½	111
M	28	111	111	109¾	110	111⅛	111⅛	109⅞	110¼	111¼	111¼	110	110	111⅛	111⅛	109⅞	110
T	29	109⅞	110⅜	109¾	110¼	109⅞	110½	109⅞	110⅛	109⅝	110¼	109⅝	110	109⅞	110⅜	109½	110¼
W	30	110¼	112½	110⅛	112¼	110⅛	112½	110	112⅜	110⅜	112⅜	110¼	112⅜	110⅛	112⅜	110⅛	112⅞
T	31	112½	112½	110¾	110⅞	112⅜	112⅝	110¾	110¾	112½	112⅝	110¾	110⅞	112½	112⅝	110¾	110¾

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	Jan. 19, 1884. Barrels.	Dec. 22, 1883. Barrels.
London	398,916	462,240
Trieste	83,096	84,543
Seven Continental Ports	1,509,858	1,551,040
Total Stocks afloat and ashore	1,991,870	2,097,823
Decrease in Stocks since Dec. 22	105,953	

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS JANUARY 19, 1884.

	Stocks Week end'g Jan. 19		Stocks Afloat Week end'g Jan. 19		Unloading Week end'g Jan. 19		Grand Total Stocks Afloat & Unloading.		Receipts. Jan. 1 to Jan. 19.		Shipments Jan. 1 to Jan 19.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	207,822	381,077	61,966	10,839	4,500	7,000	274,288	398,916	4,582	14,824	40,799	53,024
Trieste	36,035	5,479	19,577	77,617	2,300	....	57,912	83,096	8,238	9,290	12,472	13,024
Bremen	709,545	814,014	78,971	51,723	33,500	28,000	822,016	893,737	39,774	73,370	86,370	84,608
Hamburg	169,429	107,488	18,700	19,957	10,700	32,000	198,829	159,445	5,032	23,219	34,635	33,297
Antwerp	158,137	152,633	4,563	42,881	64,500	35,000	227,200	230,514	27,489	31,256	56,204	86,898
Rotterdam	59,271	44,457	....	12,306	10,000	8,700	69,271	65,463	....	10,038	15,920	14,497
Amsterdam	38,622	22,056	4,767	31,256	15.000	45,000	58,389	98,312	....	8,948	19,990	12,250
Stettin	26,096	52,048	12,164	....	5,500	....	43,760	52,048	....	1,032	7,089	8,821
Danzig	27,309	10,339	3,704	....	....	....	31,013	10,339	12,477	....	8,099	5,814
Total	1,432,266	1,589,591	204,412	246,579	146,000	155,700	1,782,678	1,991,870	97,592	171,977	272,578	312,233

	1881.	1882.	1883.	1884.
Total stocks exclusive Danzig, London and Trieste	681,952	810,502	1,161,100	1,192,696
Total afloat, exclusive Danzig, London and Trieste	133,719	153,803	119,165	158,123
Total unloading, exclusive Danzig, London and Trieste	43,500	89,100	139,200	148,700
Grand Total exclusive Danzig, London and Trieste	859,171	1,053,405	1,419,465	1,499,519
Total Shipments exclusive Danzig, London and Trieste	76,316	71,787	68,615	76,887
Total Shipments since January 1, exclusive Danzig, London and Trieste	241,614	196,057	212,208	240,371

STOCKS IN REGION FIRST OF EACH MONTH FOR 14 YEARS.

	1870.	1871.	1872.	1873.	1874.	1875.	1876.
January	338,142	544,626	532,000	1,084,423	1,625,157	3,705,639	3,672,077
February	340,154	537,751	532,971	1,183,728	1,948,919	4,104,703	3,603,203
March	342,390	587,021	579,793	1,265,373	2,283,032	4,496,751	3,734,835
April	351,474	642,000	662,497	1,244,657	2,648,210	4,592,364	3,753,513
May	328,609	771,000	877,832	1,178,643	2,623,534	4,537,843	3,940,109
June	329,908	605,000	950,803	1,192,541	2,594,286	4,552,672	4,032,126
July	351,168	554,000	1,010,302	1,324,493	2,701,625	4,502,896	4,847,301
August	321,840	511,220	990,229	1,433,620	2,279,479	4,386,720	3,500,612
September	356,908	530,146	997,126	1,513,890	2,932,444	4,223,397	3,182,160
October	419,477	541,300	951,410	1,521,185	2,758,504	3,812,945	3,011,004
November	473,896	495,102	914,423	1,452,777	3,134,902	3,672,101	3,180,983
December	576,014	502,960	886,907	1,493,875	3,449,845	3,701,235	3,142,397

	1877.	1878.	1879.	1880.	1881.	1882.	1883.
January	2,816,870	3,086,972	4,506,492	8,552,256	17,145,104	25,761,051	34,335,144
February	2,983,231	3,342,090	5,259,289	8,984,341	17,989,168	25,788,071	34,952,645
March	3,335,770	3,661,650	5,734,155	9,405,240	18,971,376	26,329,098	34,514,919
April	3,394,011	4,218,518	6,234,842	9,834,457	20,048,772	27,255,326	35,594,680
May	3,423,675	4,640,852	6,638,691	11,001,304	20,771,342	27,969,884	35,500,859
June	3,304,302	4,908,450	6,838,762	11,737,890	22,108,640	28,833,715	35,642,245
July	3,046,389	4,983,145	7,104,347	12,720,220	23,192,207	29,402,854	35,985,935
August	3,162,574	5,064,158	7,193,137	13,606,369	23,765,140	30,254,302	36,371,939
September	2,914,499	4,653,525	7,278,023	14,383,551	24,645,792	31,229,863	36,102,886
October	2,549,460	4,653,525	7,493,752	15,249,661	25,052,082	32,066,007	35,752,718
November	2,545,423	4,296,769	7,692,990	15,678,127	25,224,534	32,891,916	35,617,037
December	2,474,490	4,364,909	8,138,767	16,402,431	25,302,647	33,439,450	35,495,236

AMOUNT and VALUE EXPORTS PETROLEUM and PETROLEUM PRODUCTS From the United States, 1881-1883.

MONTH.	1881.		1882.		1883.	
	GALLONS.	DOLLARS.	GALLONS.	DOLLARS.	GALLONS.	DOLLARS.
January	18,458,954	2,066,227	30,248,954	2,759,087	38,490,505	3,506,953
February	24,197,966	2,524,055	28,753,191	2,680,861	29,209,791	2,689,721
March	32,121,969	3,285,066	40,378,457	3,753,706	36,309,101	3,423,136
April	28,008,421	2,752,729	47,273,230	4,186,955	34,614,996	3,172,492
May	35,025,896	3,361,155	44,452,727	4,168,930	61,067,399	5,412,128
June	61,966,601	5,553,268	54,066,294	4,669,564	47,923,069	4,305,086
July	51,019,204	4,684,801	60,914,823	5,128,313	47,699,387	4,179,237
August	66,280,465	5,962,949	44,011,074	3,599,440	49,580,807	4,229,292
September	51,398,719	4,762,711	41,954,730	3,410,955	55,385,030	4,773,490
October	54,244,846	5,062,724	45,400,263	4,004,179	48,326,250	4,233,210
November	46,587,631	4,399,988	35,849,016	3,308,120	46,956,205	4,212,238
December	45,250,872	4,140,430	30,201,639	2,952,914	37,574,408	3,625,056
Total	514,561,544	48,556,103	503,501,128	44,623,024	532,736,948	47,762,039

FUEL GAS COMPANIES AND THEIR SCHEDULES OF RATES.

The disgusted salt borers on the Kanawha river (W. Va.) in 1847, and at Tarentum (Pa.), in 1849, when they struck oil instead of salt water, were not more intensely dissatisfied with their "luck" than many a hapless wild-catter has been when, instead of the expected gush of oil, there came up from his well bore a terrible rush of gas. The sullen roar of the hydro-carbon monster was a death knell to his fond hopes and his prospective oil well was classed in the monthly field reports among the dry holes, and he given a place in the list of financial wrecks. But a few years have wrought a wonderful change. Now a gas well, in a given locality, is worth more than an oil well, and prospective gas territory is bought or leased with as much avidity as oil lands. The possibilities to occur in the use of natural gas in the near future are vast. Through its use the manufactures of glass and iron are even now being revolutionized. It seemed like "carrying coals to Newcastle" for a gas fuel company to enter Pittsburgh and compete with its cheap coal.

But when the Penn Fuel Co. entered the city with its six and eight inch lines, the problem was solved and coal gave way to gas. The officers of this company are E. O. Emerson, President, and J. N. Pew, Secretary. They have a total capital invested of $400,000, and control 10,000 acres of land. They have laid twenty-five miles of six-inch pipe and twenty-five miles of eight-inch pipe. Most of the gas sold by them is used in iron mills at a rate much below fifty cents a thousand feet. Their rates for heating and cooking stoves is sixty cents per thousand feet, with a discount of ten cents if paid within ten days of date of bill. The same officers control the Keystone Gas Co., of Olean, N. Y., which has a capital of $130,000, and pipes its gas from Indian Creek, distant about six miles. The street lamps are lighted by contract at the rate of $2 each a year, and cooking and heating stoves are fed at moderate rates.

The initial fuel gas company of the northern field was formed by W. L. Yelton in January, 1876, and styled the Bradford Gas Company. The sole aim of Mr. Yelton was to supply the boilers of drilling wells with gas, and only a few

business houses, among others Emery & Co.'s store and office, the Era office and a few private houses were connected with the line. An outlay of $13,500 was made before any returns came in, and the "primaries" voted Yelton's experiment a failure. But he ran "independent," and his first month's income footed up $3,000, and the net profits for the first year were $27,000. Drilling wells were charged $4 a day, and at one period 100 wells were being supplied. At the start, one well on the West Branch furnished the supply. When confined at the well the gas exerted a pressure of 300 pounds to the square inch. A test made at Brown & Norris' machine shop, on Mechanic street, two miles from the "gasser," showed a pressure of 215 pounds. At the same time considerable gas was escaping at the well. The common pressure carried on the line was 100 pounds. Three miles of 3¼-inch pipe and thirteen miles of 2-inch, constituted the outfit of the company. The boilers at the United pump station, at Tarport, and those of the Bradford water works, were each supplied at a cost of $5 a day. Drilling operations having ceased within range of the line early in 1877, Mr. Yelton sold the "plant" to McDougal, Avery & Co. This company supplied the town with gas for light and heat, in a moderate way, until the demand was greater than the supply. These gentlemen then formed the nucleus of the present Bradford Gas Light and Heating Company, which was incorporated under letters patent dated April 7th, 1879, with a capital stock of $20,000. The incorporators of the company, on March 9, 1878, obtained from the then Burgess of the old borough of Bradford, the privilege of constructing gas works in the borough and maintaining them for a period of thirty years. Lines were laid to the extensive gas "streak" near Rixford, wells drilled and every effort made to supply the demand for light and heat. C. E. Hequembourg is president of the company, and A. J. Avery secretary and treasurer. They have about twelve miles of main in use, including 2-inch, 6, 8, and 12-inch. Three members of the company are manufacturers of gas in other places, and their former experience proved of great service in overcoming certain difficulties in regulating the supply of natural gas. Compressers of costly construction were put in to overcome the friction of the gas in the pipe coming a long distance. To regulate the pressure and overcome all danger from this source, they inaugurated the use of the automatic gasometer and the meter burner. Mr. Hequembourg is the patentee of the latter device, which is in common use by all natural gas and fuel companies. It is indispensable in regulating the supply of gas as well as securing perfect combustion. The monthly rates are as follows:

Cooking stoves in private houses, net	$5.00
do do in hotels, special rates according to size and amount of work done	
Heating stoves, small size, net	4.20
do do large size, special, according to space heated	
Lights, in dwelling houses containing 12 or more lights, net each	30
do in stores, net each	42½
do in hotels and public buildings, special, according to number and size	

An ample supply of gas is assured by the company. Besides that obtained from their own wells they have purchased the surplus gas from a number of L. Emery, Jr., & Co.'s wells, and the excess available from the United Pipe Line.

Oil City, until last June, knew nothing of the luxury of natural gas for heating purposes, except from hearsay. A number of her citizens, a year or two ago, incorporated the Oil City Fuel Supply Company, but transferred their franchise to residents of another place. The new organization is officered by E. Strong, president; R. W. Porterfield, treasurer; O. H. Strong, secretary. The company gets its supply at present from sixteen wells, at a point nine miles east of the city, and have more wells drilling. The wells are not very powerful in their flow, but no fears are entertained about a deficiency of supply in the future. The company has twelve miles of 5⅝-inch and six miles of 2-inch pipe laid, and is laying six miles of 10-inch and six miles more of 5⅝-inch. Its capital stock is $150,000, and will all be paid up by the time the 10-inch pipe is laid. The line extends to Siverlyville and supplies the boilers at the Imperial refinery there; also those of the City water works, the extensive shops of the Oil Well Supply Company, the flouring mills and Trax's wagon shop. About 1,200 stoves and ranges are now connected. The monthly rates are:

Cook stove, ⅛-inch supply, net	$3.00
Heating stove, ⅛-inch supply, net	3.60
Heating stove, 5-32 inch supply, net	4.80

Where a large area is heated the rate is made to conform to it.

The Empire Gas Company is officered by E. C. Bradley, president, and J. B. Bradley, secretary and treasurer. It was organized in August, 1881, with a capital stock of $1,000,000. The main office is in Bolivar, N. Y. This is, in its operations, perhaps the most extended of any company in the country. It has in use about 150 miles of pipe of the several sizes, 6, 4, 3 and 2-inch. It supplies the villages of Bolivar, Richburg, Allentown, Wellsville, Pikeville, and farm houses throughout the township of Genesee, and

is only limited in its scope to the county of Allegany. When field operations were active there, it furnished fuel to boilers for drilling and pumping wells, and has been attached to as many as 250 boilers at once. Its monthly rates are:

Cook stoves, $3.85, discount 35 cts., net $3.50
do do in use for cooking and heating, $4.95, discount 45 cts., net 4.50
Ranges, $4.40, discount 40 cts.. net 4.00
HEATING STOVES—Frame dwellings and business houses, per square foot floor measure . . . . . .
For first 150 feet $3.30, discount 30 cts., net 3.00
For next 450 feet 6-10 cts. per foot, discount 10 per cent . . . . .
For next 250 feet 3-10 cts. per foot, discount 10 per cent . . . . .
After rate reaches $7.00 per month, remainder of space free . . .
HEATING STOVES—In brick dwelling houses, for first 150 feet $3.05, discount 30 cts., net 2.75
For next 450 feet 5-10 cts. per foot, discount 10 per cent . . . . .
For next 250 feet 3-10 cts. per foot, discount 10 per cent . . . . .
After rate reaches $7.00 per month net, remainder of space free .
An extra charge of 50 cts. made for each door opening into rooms to be heated by stove charged at regular rate . . . . . .
HEATING STOVES—In brick business houses, hotels, etc., First 150 feet $3.05, discount 30 cts., net 2.75
Next 450 feet 5-10 cts. per foot, add 10 per cent, discount 10 per ct
Remainder of space ⅛c per foot, add 10 per ct., discount 10 per ct
ATMOSPHERIC BURNERS—If used for heating water, 50 cts per month net . . . . . .
LIGHTS—In private residences 30 cts, discount 5c, net 25
do In business houses, etc., 35 cts., discount 5c, net 30

The Ontario Improvement and Gas Company, Limited, with the principal office at Friendship, N. Y., has for its officers I. E. Dean, president; A. W. Miner, vice president; and A. J. Wellman, secretary and treasurer. It supplies the towns of West and North Bloomfield and Honeoye Falls, Ontario county, New York, and in the Spring will connect with Lima. They have laid twenty miles of pipe. Ten miles of it is 5⅝ casing, and the balance is 3¼ and 2-inch pipe. The plant has cost thus far over $60,000. The president, I. E. Dean, refers with just pride to the rapid work that has been done in laying the line. The pipe was ordered October 10th, 1883, commenced laying it October 22d, and completed the twenty miles in all, of high and low pressure line, on December 22d. Four wells at present supply the vapor. The monthly winter rates are:

Cooking stoves, $3.00, discount 30 cts., net $2.70
Same, used for cooking and heating, $4.00, discount, 40 cts., net . 3.60
Ranges, $3.35, discount 35 cts., net 3.00
Same, in hotels and furnaces, special rates . . . . . .

HEATING STOVES.

In frame dwellings and business houses, for first 150 square feet [floor measure] $2.00, discount 25 cts., net 1.75
For next 450 feet 4-10 cts per foot, discount 10 per cent . . . . . .
For next 250 feet 2-10 cts. per foot, discount 10 per cent . . . . .
In brick dwellings, business houses, hotels, etc., for first 150 feet $2.00, discount 25 cts., net 1.75
For next 450 feet 4-10 cts. per foot, discount 10 per cent . . . .
For remaining space 1-10 cts. per foot, discount 10 per cent . . .
An extra charge of 40 cents will be made for each door opening into rooms to be heated by stoves upon which regular rates have been charged . . . . . .
Atmospheric burners, if used for heating water, etc., 40 cents per month net . . . . . .
Street lights, 5 feet tips, 50 cts., discount 10 per cent . . . . . .
Lights in private residences, 25 cts., discount 5 cts., net 20
Lights in hotels, business houses, etc., 30 cts., discount 5 cts.. net 25

We have received a copy of the Derrick's Hand Book of Petroleum compiled by Mr. F. H. Taylor. It presents in a compact form the market quotations and other statistics of interest to the trade.

JANUARY PRODUCTION REPORT.

In the official pipe line runs for December, 40,005.25 barrels, an average of 1,290 per day, was counted twice as runs. AGE representatives enquired at the Bradford pipe line offices before the December production report was published and were told that this oil which was received in iron tanks would be counted only once as runs. After the report was published it was learned that the amount had been counted twice through a clerical oversight on the part of accountants. To make the December estimates right subtract 1,290 barrels from the Bradford pipe line runs as they appeared in the December report.

Throughout the month of January temperatures ruled so low that it was impossible to do anything in the way of cleaning out and shooting old wells. In many sections there was a want of water and a scarcity of fuel, which resulted in a small new production in the Allegany and Bradford fields. The result of this winter embargo is now seen in the approximate figures which are given on the production of these two fields.

Reports have been received showing the amount of stocks at 6,314 Bradford wells February 1st. Stocks were reported for a small proportion of these wells for February 1st only, so that a comparison is made between 6,217 wells January 1st, and 6,247 February 1st. The difference in the number is made through the completion of new wells by parties who reported stocks from the same old wells on the first days of each month. The figures received are tabulated as follows:

Time.	No. Wells.	Gross Stocks.	Average per Well.
February 1, 1884	6,247	456,479	73.07
January 1, 1884	6,217	442,577	71.18
Difference	30	13,902	1.89

The number of wells in the Bradford field connected with the pipe lines on the 1st of January is estimated at 12,890. The above figures show an average increase in the stocks at wells of 1.89 barrels. If this average holds good for the entire number of wells in the field, the total stocks increased 24,362 barrels during the month of January, an average of 786 barrels per day. The average daily pipe line runs by both lines in the Bradford field during January were 31,020 barrels. Adding the increase of stocks at wells to the pipe line runs a fair estimate on Bradford's January production would be:

	Barrels.
Average Daily Pipe Line Runs	31,020
Daily Increase of Stocks at Wells	786
Bradford's January production, est	31,806

A decline from the December estimate of 2,664 barrels.

THE BRADFORD FIELD.

	Barrels.
Estimated daily production for January	31,806
do do do December	34,470
do do do November	35,026
do do do October	35,654
do do do September	34,965
do do do August	35,087
do do do July	34,530
do do do June	35,279

The daily production of the Bradford field for January 1882 as compiled by the publishers of the AGE for the producers committee was 59,336 barrels.

THE ALLEGANY FIELD.

Reports of stocks at wells received from the Allegany field are tabulated as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
February 1, 1884	1,007	67,422	66.9
January 1, 1884	1,003	66,165	65.9
Increase per well			1.0

With 3,320 wells in the Allegany field on January 1st and 3,384 wells on February 1st, the above results are tabulated as follows:

Time.	No. Wells.	Average per Well.	Gross Stocks.
February 1, 1884	3,384	66.9	226,389
January 1, 1883	3,320	65.9	218,788
Total increase			7,601
Daily average increase in stocks			245

At this rate the total stocks in the field increased 7,601 barrels during the month, or 245 barrels per diem. The runs from the lines were 11,018 barrels a day. Adding the increase in stocks makes the daily production of the Allegany field in January 11,263 barrels, a decrease of 1,174 barrels a day from the month preceding.

	Barrels.
Allegany's January production is estimated at	11,263
Allegany's December production is estimated at	12,437
Allegany's November production is estimated at	12,678
Allegany's October production is estimated at	13,089
Allegany's September production is estimated at	12,335
Allegany's August production is estimated at	12,264
Allegany's July production is estimated at	12,345

FOREST, WARREN AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Forest and Warren counties. The number of wells on the 1st of each month with their averages are tabulated as follows:

Field.	No. Wells. Jan. 1.	No. Wells. Feb. 1.	Average per Well. Jan. 1.	Average per Well Feb. 1.
Clarendon & Tiona	27	28	43	65
Cherry Grove	56	54	115	125
Balltown & Cooper	104	111	247	245
Miscellaneous	72	74	43	52

The January outside runs, i. e., for all sections except the Allegany and Bradford fields, were 16,140 barrels daily. Stocks at 100 wells in the Cooper district were unchanged during January. This would indicate that the daily average runs from the Cooper district that month about represented the production. From all other sections the small number of wells heard from show an accumulation of stocks.

The number of wells heard from is too small for an estimate on production, but from the meagre reports it is safe to conclude that stocks accumulated at wells in nearly all the sections which made up the outside field. Adding the Allegany and Bradford estimates to the outside runs the following total is obtained:

Field.	Barrels.
Bradford	31,806
Allegany	11,263
Outside runs	16,140
Total	59,209

THE DECEMBER ESTIMATE.

Field.	Barrels,
Bradford	34,470
Allegany	12,437
Outside runs	18,428
Total	65,335

Estimating the January and December outside production alike for the two months, the January estimate for the region is 61,497 barrels.

SHIPMENTS AND STOCKS—RUNS.

RUNS OR RECEIPTS.

PIPE LINE.	JAN. 1884.	DEC. 1883.
United	1,528,408.66	1,679,952.46
Tidewater	276,318.48	294,512.83
Octave Oil Co	2,689.00	3,247.40
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	5,925.46	4,929.02
Cranberry Pipe Line	12,153.07	5,091.81
Total	1,825,494.67	1,987,733.52
Less oil counted twice as runs	21,965.53	40,005.25
	1,803,529.14	1,947,728.27
Daily average	58,178.36	62,829.94

DELIVERIES OR SHIPMENTS.

PIPE LINE.	JAN. 1884.	DEC. 1883.
United	1,517,829.69	1,518,998.40
Tidewater	147,604.58	212,570.15
Octave Oil Co	2,735.00	2,944.12
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	12,498.67	10,194.43
Cranberry Pipe Line	5,860.03	4,747.57
Total	1,686,527.97	1,749,454.67
Daily average shipments	54,404.13	56,434.02

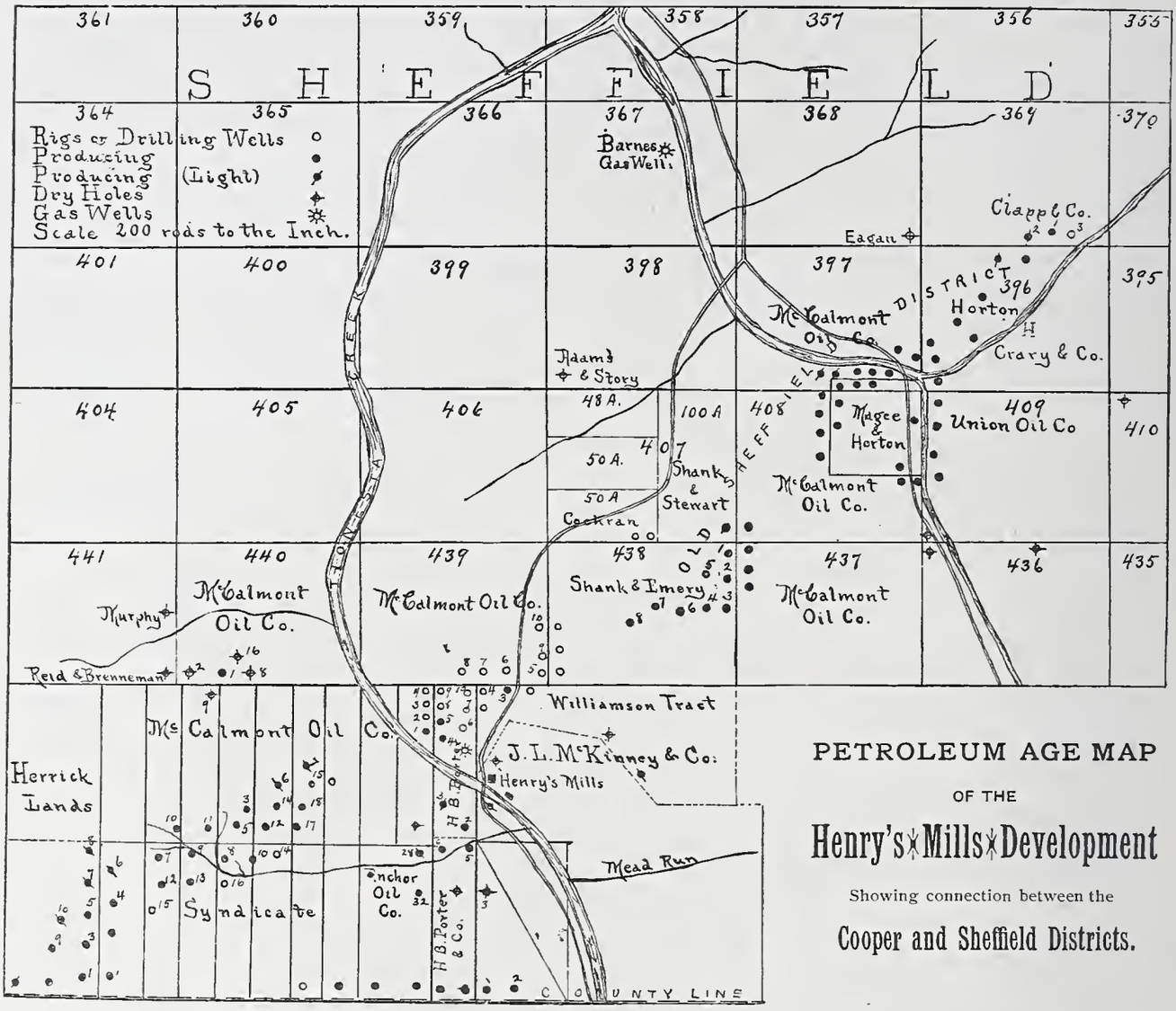
Daily excess of runs over shipments, January	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

PIPE LINE.	JAN. 31, 1884.	DEC. 31, 1883.
United	33,280,833.97	33,286,943.45
Tidewater	2,485,166.29	2,359,626.20
Octave Oil Co	6,104.00	5,888.88
Charley Run	3,986.81	3,986.81
Shaffer Run	28,052.75	28,052.75
Franklin (limited)	18,928.16	25,501.37
Cranberry Pipe Line	11,858.32	5,565.28
Total	35,834,930.30	35,715,564.74

Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	396,004.51

	RECEIPTS.	DELIVERIES.
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52,737
Daily Average February	65,208	44,352
Daily Average January	65,125	43,813



THE HENRY'S MILLS DISTRICT.

The above map shows at a glance the situation at Henry's Mills. From the north-eastern end of the old Sheffield development the wells have gradually improved in size to Shank & Emery's No. 7 and 8 on lot 438, each of which started at 150 barrels. The north-eastern end of the Reno streak from Cooper Hill is indicated by the McCalmont Oil Co's. Nos. 15 and 18, on the Henry lands, on the west side of Tionesta Creek. The gap between these two developments extends over a space of a mile and four-tenths. The Porter gas well which was completed in May 1882, caused operators to drill to the east where dry holes and several light producers were found. The Porter No. 4, west of the gas well at Henry's Mills and John L. McKinney & Co.'s No. 3, six hundred feet from the north-western corner of the Williamson tract started the drilling which is now shaping the connecting link between the Sheffield and Cooper districts. From present indications this belt will not be wider about the McKinney well than it is in the vicinity of the Reno. The location of the test well which Cochran Bros. are drilling on the south-eastern corner of their 50 acre purchase of lot 407, will test the theory which is entertained concerning a streak west and parallel with the old development. Since the map passed from the hands of the engraver, the McCalmont Oil Co.'s No. 2 and Porter's No. 6 have been added to the producing list. On the 15th inst. there were seven rigs up and building and seventeen wells drilling in the Henry's Mills section.

THE PETROLEUM AGE.

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PETROLEUM FIELDS OF EUROPE.

A special correspondent of Bradstreet's in a recent tour of central, southern and southwestern Europe made a careful study of the foreign petroleum fields. His report, accompanied by a comprehensive map, appears in this issue of the Age, through the courtesy of the publishers of *Bradstreet's*. In the light of the information furnished by the thorough review of this correspondent *Bradstreet's* is of the opinion:

That American petroleum has maintained its position in all foreign markets, except those of Russia, Roumania and Austro-Hungary, from which they have been in part excluded by heavy import duties.

That the Roumanian oil is the only crude product which, even with free trade, can compete with American in price and quality; at present its scale of production is too small to materially affect markets.

That the Carpathian oil fields, including those of Roumania and Transylvania, promise, when developed fully, to be important factors in the supply of southeastern Europe, but that political and social conditions promise to considerably retard this development.

That the refineries of Fiume will be dependent for some years, at least, on the United States for their supply of crude oil. The same applies to those of France and Spain and to British buyers of residuum.

That neither the refined, crude or waste products of the Russian oil districts are likely to affect American sales outside of Russia.

That while Russian oil is a cheaper fuel than coal for steamers in the immediate vicinity of the oil regions, and has been tried with some success even in England, the high freight and want of return cargoes will seriously impede its use in western Europe for this purpose.

That while under the new import duty in Germany the domestic factories may monopolize all the trade in lubricators, that in illuminating oils will remain in the hands of America, unless production here continues to decrease.

That the southern ports of Europe, those of the Levant and North Africa will, in spite of Russian and Roumanian competition, be larger consumers of American oil in the future than they have been in the past.

That the European markets, which we supply to-day, can only be lost by a deterioration in the quality of our products or a falling off in the supply.

AUSTRO-HUNGARY AND ROUMANIA.

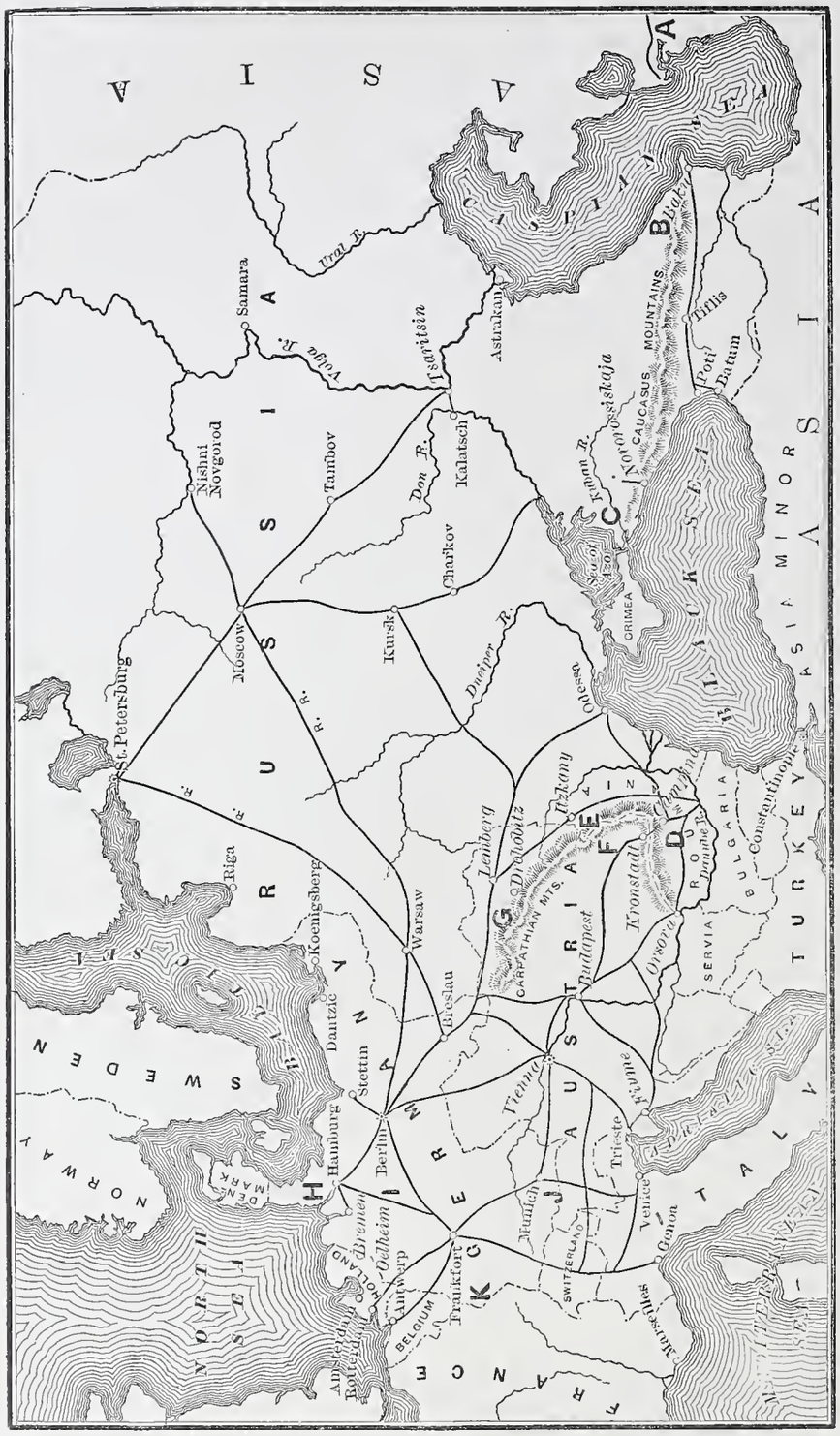
The oil found in the geological system of the Carpathians (Galicia, Hungary and Roumania, see D, E, F and G on accompanying map) is that which by its high natural quality, its quantity, and its vicinity to the markets, most immediately threatens American supremacy in central and southeastern Europe, while the financial necessities of the government, forcing the Austrian Chancellor of the Exchequer to impose a very high duty on imported refined oils, make the price of the American oil higher in Austro-Hungary than in other parts of Europe.

The approximate consumption of illuminating oil by the 37,000,000 Austro-Hungarians, with the tax which the government expects to raise thereon, is:

49,000,000 gallons refined (imported) at 14.4 cents per gallon	$7,056,000
6,000,000 gallons crude from America or Russia at 1.6 cents	96,000
18,000,000 gallons crude from Roumania at 0.96 cents	182,800
Total import duty	$7,324,800
Internal tax on 18,000,000 gallons, the product of above 24,000,000 gallons crude, at 7.6 cents	$1,368,000
Internal tax on 12,000,000 gallons produced from the crude oil of Hungary and Galicia	912,000
Total duties and internal revenue tax	$9,604,800

In consequence, when American standard white was to be had in London, Hamburg or Trieste at 12 to 13.5 cents per gallon, it was quoted in December in Vienna at 30.3 cents, while Roumanian oil was sold for 29.7 cents and Gallician at 29.1 cents per gallon. Under the stimulation of the protective duty large refineries have been erected at Itzkany-Suczawa, on the Moldavian, and Orsova, on the Wallachian frontier, to refine the crude oils imported from Roumania. A third is projected at Buda Pesth for the same purpose, while there are two large refineries near Vienna and ten small ones in Transylvania using the same crude oil. The refinery alluded to in Bradstreet's of December 23, 1882, erected at Fiume, the only seaport of Hungary, has now been at work for six months. It has imported the 7,222,534 gallons of crude oil shipped from

MAP OF THE PETROLEUM OIL FIELDS OF EUROPE.



EUROPEAN PETROLEUM-PRODUCING FIELDS, REFINING AND IMPORTING POINTS AND CENTERS OF DISTRIBUTION.

RAILWAYS ARE SHOWN CONNECTING SUCH CITIES ONLY; REFINING POINTS ARE INDICATED BY *italics*, OTHERS (MARKETS OR DISTRIBUTING STATIONS) BY ROMAN.

A. Unworked petroleum fields lately discovered on the railroad from Michaelovsk to Geok Tepe. B. The Baku and Apscheron oil fields, worked by the Nobel Bros. Company and others, and now supplying Russia via Astrakhan and the Volga, and the Black sea districts via the Baku-Batoum railroad. C. The Taman and Transkuban district, worked by a French company, founded by Dr. Tweddle, and shipping at Novorossiskaja, on the Black sea. D. In Wallacho-Moldavia are the refineries of Senator Monteoru, Prince Cantacuzene, and others, using the oil from the Wallachian regions and shipping it to the Levant and Constantinople. E. North of this point are refineries at Sucawa-Itzkany, on the Austro-Roumanian frontier, refining the Moldavian oil for consumption in Austro-Hungary, and at Moinesti for Roumanian consumption. F. In Transylvania, at Kronstadt, Marose-Vasarhely, etc., are the several small refineries, using Transylvania and Roumanian crude oils, and selling only for local consumption. G. In Galicia, at Lemberg, Drohobycz, Kolomea, etc., are several refineries using the crude petroleum and ozokerite of Galicia. H. Small refineries only for local consumption. I. Refineries at Oelheim and Peine using the German crude oils. J. The Bavarian field at Tegernsee experimentally worked by and English company. K. The Alsatian oil field, very trifling production. L. One refinery near Bremen, which imported in 1883, 71,696 barrels crude petroleum from the United States of America. M. Fiume—Here there is one refinery, which imported, in 1883, 156,420 barrels crude petroleum from the United States of America; while another is projected to work the crude oils of the Caucasus. N. Orsova, on the frontier of Hungary and Roumania, formerly distilling shale oil, now using the crude oils of Roumania, and selling in Austro-Hungary. O. Vienna—In the suburbs are the two refineries of Gustav Wagenman and Hochstaedter & Co., using Roumanian crude oils and selling only in Austria.

New York and Philadelphia to Fiume in 1883, and is likely to become in future a very large buyer of American crude oil. It is announced that an American projector, who has already obtained $500,000 in Paris for investment in Russian oil wells, is now trying to form a company in London to erect a refinery at Fiume to work his Russian crude oil. For reasons mentioned in the notes on Russia this promises to be a losing venture, yet it augments the number of those vested interests which will work to exclude the produce of our refineries from Austro-Hungary, while they will import our crude oils so long as the latter can be supplied more cheaply than equally good qualities of Carpathian or Caucasian oil.

The opinion expressed in Bradstreet's of December 23, 1882, that the produce of the Carpathian fields (Galicia, Transylvania and Roumania) will prove a greater competitor of our crude oil than that of the Caucasus is confirmed by latest reports, which we summarize as follows:

1. The Galician fields, on the northern slopes of the Austrian Carpathians, are the oldest worked. Between 1857 and 1867, when American oil was not so cheap, the district of Boryslaw alone pro-

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countries (Greece, Italy, Turkey and Egypt) which by their vicinity to the Black sea are most open to the competition of the Russian and Roumanian oil. Russian dealers have endeavored to open a trade there by putting Russian oil into American cases, and Prince Cantacuzene has built a case factory in Roumania for the purpose of supplying this region. The demand is mostly for cases (of which above 3,000,000 were imported from the United States in 1883), and is capable of great extension, the present importations being under one gallon per head of the population in Greece and Turkey, and under .62 gallons per head in Portugal and Italy. Gibraltar and Malta, under the free-trade policy of Britian, would serve as distributing points for American petroleum to a much greater extent than at present if the troublesome military regulations were relaxed.

RUSSIA.

The largest importation of petroleum from the United States into Russia was, in the fiscal year 1872–73, 14,940,847 gallons, of which 10,447,847 were imported direct, and the remainder via Germany. In 1880 this had fallen to 7,950,734 gallons, valued at $2,000,000, of which 4,588,413 gallons went via Germany, 1,199,055 gallons direct by sea, and 2,162,105 gallons by other routes. The decrease noted in our exports of oil to the German Baltic ports is due chiefly to the falling off in Russia's importation via Germany, while our direct shipments to Russian ports in the past year were only 1,698,946 gallons, being 365,874 gallons less than in the previous year and 13,241,901 gallons less than in 1873. This decrease is due to the high Russian import duty (about 66 per cent. ad valorem) and the great increase in the yield of crude petroleum in the Transkuban district and in Baku. The joint stock company of Nobel Brothers, supported by the Russian government, ships about two-thirds of the Baku production, and has a fleet of ten sea-going tank-ships, which convey the refined oil to Astrakhan, where it is transferred to thirty river steamers and brought to Tsaritsin, on the Volga, the great distributing point for all Russia. A short railway connects this place with Kalatsch, on the Don, thus affording a route to the Black sea, in addition to that of the Baku-Batoum Railroad. The comparative prices of Russian and American refined oil at St. Petersburg in December last were: American, 2.70 roubles; Nobel Brothers, 1.80 roubles; other Russian brands, 1.50 roubles per pood, or about 23, 15.3 and 12.8 cents per gallon. Thus, American refined, which can be delivered in St. Petersburg at 13.54 cents per gallon for standard white in barrel, exclusive of duty, commands 50 per cent. more in the market than the best Russian oil, which is a strong proof that the latter cannot compete with the American oil in neutral markets. The accompanying map shows the position of the Caucasian oil fields and their connection by rail and water with the markets of Europe and the Levant. In 1880 they produced 55,000,000 gallons of oil; in 1883, 250.-000,000 gallons; and appear likely, since the Baku field alone covers 1,200 square miles and extends below the sea to the eastern shores of the Caspian, to equal in productive capacity those of Pennsylvania. Although a German-Russian company has been founded to promote the sale of the Russian oil in Germany, and the Chambers of Commerce at Tilsit, Koenigsberg and Breslau, in their annual reports to the Prussian government, maintain that Russian refined oil, while lower in price, is equal in quality to the American, actual trials have proved the reverse. A shipment of Nobel Brothers' refined oil was sold at 12 marks the 100 kilograms (about 8.6 cents per gallon) in tank-cars on the Russo-Prussian frontier. Adding cost of old American barrels, in which the oil is sold to make unwary buyers suppose that it is American, the cost would be 10.1 cents per gallon, exclusive of duty, as against 12.67 cents for our standard white in Stettin. But the latter has 66 per cent. more illuminating power, and would therefore be as cheap at 16.2 cents as the Russian at 10.1 cents per gallon. The *Boersen und Handelszeitung*, of Frankfort-on-the-Main, says that Nobel Brothers are withdrawing from the attempt to compete with American oil in the German markets. Only under the protection of the heavy Russian duty, or in countries which, like Persia and Central Asia, are shut out from western sources of supply, can the Baku oil hold the market. The low price of the Baku crude oil (8.5 cents per forty-two gallons) has led some refiners in Austria, France and Spain to suppose that it will make them independent of America. But the experience of the refinery lately established at Fiume, in Hungary, which, though it is supported by the most successful refiners of France, and by a high protective duty, has hitherto failed to supply an illuminating oil which can compete in price and quality with the American, is opposed to this view. It is thought that this failure of the refinery is due to the fact that while the French and Spanish refiners take our lightest crude oils, only the heavier sorts have been

shipped to Fiume. If this be the case it will be still more disadvantageous to use the still heavier Baku oils. According to A. Wurtz's "Dictionnaire de Chemie" the Caucasian oil of .884 specific gravity produces 2.7 per cent. of volatile products at 140 C., 13.3 per cent. at 180 C., and 19 per cent. at 220 C., while 80 per cent. of the light oils of Pennsylvania are volatilized at only 200 C. It would require two barrels of Baku crude to give as much illuminating oil as one barrel of the lighter American. At the lowest cost of tanking the oil from Baku to Batoum, and shipping it thence in old American barrels, it could not be delivered at Mediterranean ports for less than $2.88 per 42 gallons.

The refiner at Fiume would have to purchase two barrels Baku oil at $2.88	$5.76	
Duty on 252 kilograms crude oil at 55 cents	1.39	
Together		$7.15
To obtain the same result as from 42 gallons Parker oil at 8 cents, including barrel	$2.56	
Freight, primage charges and leakage	1.50	
Duty on 126 kilograms at 55 cents	1.20	
In all		5.26
Thus showing a saving of		$1.89

—made by purchasing crude Parker instead of Russian oil, to which may be added a further saving of 32 cents in cost of refining. The large quantity of residuum obtained from the Russian crude oil will not cover the difference in cost.

A shipment of 6,000 barrels of Russian oil to Liverpool was sold for less than the cost of barrels and freight. From this it appears that there is little chance of our shipments of American crude oil to Europe being seriously reduced by the competition of Russia unless a much lighter oil is discovered than any that has hitherto been shipped thence.

At a time when the reputation of American lubricating oils was damaged by the inferiority of those sent to the German market a large sale was secured for Russian lubricators. But a thorough trial has proved their inability to compete with the better American oil now in the market, and the fact that the United States of America shipped 1,321,345 barrels of lubricating oil to Germany in the year ending June 30, 1883, against 805,938 barrels in the preceding year, proves the supremacy of our product.

FRANCE, SPAIN AND CUBA.

Aside from Austria, the only countries in which the high protective duty on refined petroleum encourages the importation of the crude oil are France, Spain and Cuba. The refineries are mostly controlled by one banking firm, which is also interested in the refinery at Fiume. Although French capitalists have invested largely in the Caucasian oil fields, the following figures, showing a large increase in the French importation of all American petroleum products, do not point to any danger from Russian competition.

The direct American shipments to these countries were:

	1883.	1882.	Increase.	Decrease.
CRUDE.				
France	38,909,053	28,922,604	9,986,449	....
Spain	12,411,383	12,814.730	....	403,347
Cuba	2,171,437	3.205,576	....	1,034,139
Total gallons	53,491,873	44,940,950	8,550,963	....
REFINED.				
France	2,102,092	1,516,033	586,059	....
Spain	282,480	198,733	83,747	....
Cuba	449,652	481,000	....	32,348
Total gallons	2,834,224	2,195,766	638,458	....
NAPHTHA.				
France	7,192,361	5,170,182	2,022,179	....
Spain	....	151,021	....	151,021
Cuba	5,225	....	5,225	....
Total gallons	7,197,586	5,321,203	1,876,383	....
RESIDUUM.				
France	1.313,420	29,140	1,284,280	....

Small quantities of mineral oil and asphalt have been found in Cuba and shipped to the United States, but our exports to France and Spain seem likely to increase in the immediate future.

CENTRAL EUROPE.

While Germany has always been the largest foreign buyer of American petroleum a great part of its purchases have been credited in our export lists to Belgium and Holland, whose ports, having cheap water-carriage to southwestern Germany, are more conveniently situated than Hamburg or Bremen for the supply of that district and Switzerland. While Italy will now compete for the supply of Switzerland, since the Gothard tunnel has opened up a direct railway route between the latter country and Genoa, there has not yet been time for change in the channels of supply, and we therefore consider the shipments from the United States to Holland, Belgium and Germany as including also the consumption of Switzerland.

The amount in gallons for the past two years was as follows:

	1883.	1882.	Increase.	Decrease.
REFINED.				
To German ports	109,196,885	127,343,144	....	18,146,259
To Dutch ports	20,435,072	22,321,135	....	1,986,063
To Belgian ports	44,176,058	36,819,558	7,256,500	....
Total gallons	173,808,015	186,483,837	....	12,675,812
CRUDE.				
To German ports	2,405,714	1,937,944	467,770	....
None to Belgium or Holland	....	....	....	....
NAPHTHA.				
To German ports	2,308,788	2,442,175	....	133,287
To Belgian ports	823,407	1,047,585	....	224,178
None to Holland	....	....	....	....
Total gallons	3,132,195	3,489,760	....	357,465

The great falling off in our exports of refined oil to Germany is partly accounted for by the fact that the Baltic ports, Dantzic, Koenigsberg and Stettin, which formerly supplied a part of southwestern Russia with our oil but now im-

port Russian petroleum, have in the past year received 6,792,174 gallons less from us than in 1882. But the decrease in our shipments to Germany is fully counterbalanced by our increased exports to Belgium (7,256,500 gallons), which supplies a part of Germany, to Scandinavia (1,668,683), which formerly purchased in Hamburg and Bremen, to Austro-Hungary, which having taken 7,902,352 gallons more from us through its Adriatic ports than in 1882, will have imported as much less via Germany, and to Italy (3,032,614 gallons), which, through Geneva, is now competing with the North sea ports for the foreign trade of Switzerland.

That the actual consumption of American oil in the above countries has not been reduced in the past year is shown by the official statisticts of the petroleum stores in the seven chief ports—Antwerp, Rotterdam, Amsterdam, Bremen, Hamburg, Dantzic and Stettin. In the first eleven months of 1883 there had been 3,222,783 barrels taken from these stores, against 3,183,234 barrels for the corresponding period in 1882, showing an increase of 39,549 barrels in the quantity taken into consumption. The total stocks in these seven ports on December 1, 1883, were 1,609,803 barrels, showing a decrease of 5,025 barrels as compared with the stock (1,614,828 barrels) on December 1, 1882. Deducting from American exports to the aboved-named ports the quantities shipped thence to Scandinavia, Austria, etc., there is still shown a consumption of about two gallons of American refined oil per head for each of the 57,636,580 inhabitants of Germany, Belgium, Holland and Switzerland.

The increase of our shipments of crude oil (exclusively to Bremen, which has one refinery) shows that the competition of the German and Russian oil fields has not yet reduced our trade in this respect. To protect the Oelheim product and that of the shale and lignite oil distilleries in Germany, the government has imposed on imported lubricating oils and naphthas not used for manufacturing purposes (hitherto admitted duty free) the same duty as on the refined oil, 6 marks per 100 kilograms, or 4.32 cents per gallon. The distillation of bituminous shale and coal in Prussian Saxony and Thuringia, though not so profitable as in Scotland, is still an important industry. Present prices, delivered in Halle, are: Yellow paraffine lubricating oils 13.50 marks per 100 kilograms, or 9.73 cents per gallon; dark oils 0.36 cents per gallon less; solar oil for lamps 18.75 to 20 marks per 100 kilogrammes, or 13.5 cents to 14.4 per gallon. Before the cheap oils of Pennsylvania appeared in the American markets this solar oil was sold at 60 to 80 cents per gallon. These factories also ship a small quantity of paraffine wax to Italy, but import paraffine scales from Scotland in spite of the import duty of 25 per cent. One factory, that of Rehmsburg, has lost $180,000 on its transactions within the past year, and the proprietors of this and other works are clamorous for an increase in the duty on American petroleum and its products.

The natural oil wells of Germany have hitherto served merely the purposes of stockjobbers without bringing profit to investors. The production of Lobsann and Schwabweiler in the Alsace (marked K in the accompanying map) does not exceed an annual value of $60.000, the cost of obtaining the crude oil being 96 cents per gallon. The Holstein oil districts (H on the map) have not shown a better result, although above $240,000 have been expended in attempts to develop them; the expense of bringing the oil to the surface is 11.34 cents per gallon. An Anglo-Continental oil company, unsuccessful elsewhere, is now boring at Tegernsee in the Bavarian Tyrol (J on the map), where a spring supplying about eleven gallons daily has been known for over 450 years, but whether it will be found in workable quantities is at present doubtful. The most notorious of the German oil fields, Oelheim (I on the map), has brought profits to company promoters in London, Bremen and Berlin, but none to investors; the 100-mark shares of the Berlin company are now 71.5 per cent. under par, and all three companies have suspended operations. But a private speculator, Mr. George Kleissen, has bored three wells there, which yield respectively 120, 100 and 40 gallons daily, and since the greatest depth hitherto reached does not exceed 720 feet, it is possible that eventual success may still crown the hitherto unsuccessful efforts made in this the most promising of all the German fields.

The quality of the Oelheim oil improves and its quantity increases as greater depths are reached, and the influx of water, a great obstacle hitherto, has now been overcome. The Peine refineries have now resumed work, and after using up their old stock have purchased 2,000 barrels of Mr. Kleissen, and are producing a very good lubricator.

The most experienced men in the trade believe that the whole of the Oelheim district will not supply 5 per cent. of the home demand, and that America will continue to rule the market

wherever illuminating power and cleanliness are more important than low price.

The highest prices of December at the chief seaports and inland markets were, for standard white, including barrel: Amsterdam and Rotterdam, 10.75 florins per 100 kilograms, or 12.9 cents per gallon; Antwerp, 22 frances per 100 kilograms, or 12.74 cents per gallon; Bremen, 8.55 reichsmarks per 100 kilograms, or 12.31 cents per gallon; Hamburg, 8.55 reichsmarks per 100 kilograms, or 12.60 cents per gallon; Stettin, 9 reichsmarks per 100 kilograms, or 12.96 cents per gallon; Berlin (including 6 marks import duty), 26 marks per 100 kilograms, or 18.72 cents per gallon; Mannheim on the Rhine (the chief south German market), 27 marks per 100 kilograms, or 19.44 cents per gallon.

SCANDINAVIA.

The imports of American refined petroleum into Denmark, Norway and Sweden show a larger amount per head of the population than those of any other country in continental Europe, and the increase in their imports in 1883 accounts to some extent for the falling off in German imports.

	1883.	1882.	Increase.	Decrease.
REFINED.				
Denmark	11,311,268	10,957,898	353,370	....
Sweden and Norway	8,849,100	7,533,787	1,315,313	....
Total gallons	20,160,360	18,491,685	1,668.683	...
CRUDE.				
Sweden and Norway	68,374	148,235	....	79,861
NAPHTHA.				
Denmark	....	149,233	....	149,233
Sweden and Norway	949,377	501,449	447,928	....
Total gallons	949,377	650,682	298,695	....

GREAT BRITIAN AND IRELAND.

There were imported into the United Kingdom from the United States in the following years in gallons:

	1883.	1882.	Increase.	Decrease.
Refined	70,467,180	55,780,785	14,686,395	....
Residuum	6,449,100	5,187,800	1,261,300	....
Naphtha	6,570,687	7,376,450	....	805,763

The British importation of American petroleum has thus increased 25 per cent. in the year 1883. In addition to this, 12 shale oil distilleries in Scotland distill annually 39,000,000 gallons of crude oil from 1,220,000 tons of shale, producing therefrom, in 1883, 15,900,000 gallons of burning oils, 24,500 tons of lubricating oils (which are there sold by weight), 15,321 tons of paraffine scale, and 10,000 tons of sulphate of ammonia. In spite of the cheapness of the American oil, these factories are so profitable that one of them paid 25 per cent. dividend last year, and the market value of their shares (£1,500,000 at par) is now £2,500,000, or at a premium of 66⅔ per cent; 6,000 barrels of crude Baku oil were imported at Liverpool as an experiment, but proved the inability of this oil to compete with the American product. The cost per barrel of 50 American gallons, merely for package and freight, was as follows:

	s.	d.
Old American barrels, delivered at Baku, each	7	0
Railroad freight per barrel of 390 pounds gross weight, Baku-Batoum, at 32s. 6d. per ton	5	8
Sea freight from Batoum to Liverpool, at 30s. per ton	5	3
Total, exclusive of cost of oil at Baku	17	11

—equal to $4.34 per barrel, or 8.07 cents per gallon, for an oil which will produce only half as much illuminating oil as the same quantity of Parker.

THE RENO WELL.

As a rule all there is of interest concerning a white sand field clusters around a few pioneer wells. When the history of these wells has been related, there is but little to narrate which does not verge on the commonplace. The Shannon, Anchor, Reno, Reid & Brenneman, Shultz, Patterson and McKinney wells occupy the foreground of the crude panorama which has been moving on Cooper Hill since the closing days of July, 1882. These wells have all exerted an influence on values, and to some of them a greater effect has been attributed than was merited. For instance, the panic of November, 1882, is laid at the derrick door of the Anchor Oil Co.'s No. 1. The price, 'tis true, went down as the drill cut into the rock, but this well only precipitated a crash which was as sure to come as the sun is to sink daily below the hemlocks of Cooper Hill. Oil had passed from the hands of the giants of speculation to the mass "who buy when prices are rising and buy most freely at the top." The market was over bought, crowded, as the sequel showed, above its proper level and was tottering for a fall. During the succeeding weeks the speculative trade was highly sensitive to the motive power of the wild cat, and experimental wells were carefully watched by a small army of scouts. After the Shannon mystery and the Anchor No. 1, the Reno falls into line. It is the largest well ever struck in the Cooper or Balltown districts, and was a crushing surprise to the trade. The well was in direct charge of Mr. James R. Adams, Superintendent of the Reno Oil Co., a gentleman who has directed operations on the shores of the Caspian and in different parts of the Pennsylvania region. He is one of those grand fellows found in the rank and file of oil superintendents—a man incapable of doing a mean act, and one whose mental equilibrium is never disturbed by trifles. Of all the wells which agitated the trade during the years of 1882 and

1883, "the sunshine of memory suffuses the minds" of the field men when their fancy reverts to the grand old Reno. The blackened derrick of the great gusher stands under the hemlocks on the lofty ridge overlooking the deep ravine through which winds a small stream that bears the unromantic name of Brush Run. The weird gas lights of Gusher City still dispel the gloom from its surroundings. It is a short distance east of a 45° line, and three-quarters of a mile from the Shannon well. The oil trade voted its geographical position doubtful, concluding the well was too far north and west to catch the belt or streak which might run from the Shannon well in a north-easterly direction. On the evening of December 18th, 1882, the drill stopped in a fine white sand, which deeper drilling demonstrated to be the stray. The barometer had been used many times in ascertaining the difference in elevation between the Reno and the Shannon and Anchor wells, but the records of these two wells, which were used for a standard of comparison, were so hazy that the point where the sand would be reached in the Reno well could not be definitely ascertained. The first bit run on the morning of the 19th passed into slate. As Stevens thumbed the temper screw, he remarked that "she was reaching for it," meaning that the rock was being cut by the drill at a rapid rate. During the forenoon the hard shell which caps the porous rock in some sections of Cooper Hill was punctured. Soon after the gas was struck. It came by puffs, shutting off at intervals, which indicated that the well was filling up. O. A. Evans, the scout representing Munhall & Smithman, did not wait to see the oil, but left as the flow of gas became periodic. They pulled out the second bit about eleven o'clock, when it was found that the oil had filled up over the tools. The measuring line showed that the sand was struck at 1,965 feet. A fresh bit was put on, the tools were lowered, and the rock began to give way to the vibration of the drill at two minutes after noon. At 12.48 p. m. the well started to flow, when it seemed as if "the fountains of the great deep" had been tapped. There was a roar of gas and oil, accompanied by that choking in the pipes which indicates heavy flowing. At the end of the first hour the 600 barrel tank contained three feet and one inch; at the end of the second, five feet ten inches; and at the end of the third hour eight feet five and one-half inches. Reduced to barrels, the production for the first hour was about 165 barrels. Both 600 barrel tanks were filled in less than eleven hours, after which the crude drenched the snow.

The scouts only waited to see the tools drawn after the shell was broken. It was enough for them to know that the well had filled up 75 feet with oil when the sand was fairly tapped. The nearest Western Union telegraph offices were at Garfield and Sheffield, points ten miles away, and the snow deep under the hemlocks. Six miles of the road lay through the woods. It was rough and circuitous, and may have seemed dangerous to the parties who watched the field men riding at a breakneck pace over it for the telegraph offices. Scouts Edwards, Rathburn and Tennent made an even start on three of the fastest nags which the stables of Warren county afforded. Here was the first and wildest race in the annals of scouting. Tennent, who then kicked the beam at one hundred and eighty pounds, was handicapped by his extra avoirdupois. His mare, "Curley," fell twice before the old Sheffield road was reached. He waved a hand to Edwards and Rathburn that he was unhurt, and they did not slacken their pace from a gallop. Once on the main road the three headed for Sheffield and kept together until the top of the long hill was reached about a mile above the town. From this point Edwards, who is the lighest of the three, rode his horse on a run down the steep hill, while his companions were obliged to slow to a trot. He easily took first place at the telegraph office, having dodged his way among the stumps in the woods, swung around sharp corners and curves, and made the distance in forty-three minutes. He was reminded on Christmas day, by the receipt of a heavy gold-chronometer from his employers, Clark & Foster, of Oil City, that his work was well done and his ride in good time. Only the first messages were sent from the telegraph offices. Soon after the market opened in the afternoon of December 19th, Sheffield and Garfield were cut out in some way as yet unexplained. The wires ceased to work and the sounder lost its magnetic click in the hour when it was most needed. Values on 'Change were fast fading, and the men who swelled the tolls of a grasping monopoly day after day, for months, failed to get that fair play of which we in America sometimes boast. Since the men who suffered financially did not have the matter ferreted out and the guilty parties sent to the penitentiary, it is hardly worth while to ask for an investigation at this late day. It would bother somebody to explain how certain irregularities occur in the telegraph service when news has to be transmitted from the front. There is much o interest which is passed over concerning this day

in the field. The highest point reached by the market on the 19th was 98¼ cents, and the lowest 84⅛. On the 27th of December oil sold as low as 75⅛ cents.

Mr. T. J. Kerstetter, who had immediate charge of the well during the Fall of 1883, furnished the following interesting data: The depth of conductor was 38 feet; well cased, 375 feet; first sand reached at 1,400 feet; through first sand at 1,425 feet; there was little gas near the middle of first sand; top of red or gray sand, 1,912 feet; bottom, 1,958 feet; below gray sand seven feet coarse black slate; struck third sand, 1,965 feet; April 15th well shot with six quarts glycerine; May 17th was given a 20-quart shot; June 15th was torpedoed with 30 quarts glycerine; July 14th the well was tubed and rodded, when it was demonstrated that it could not be pumped. Under the action of the sucker rod its production declined from fifteen barrels to four per day; July 26th good results were obtained by the use of 24 quarts of glycerine; October 26th well shot with 40 quarts and produced 285 barrels the succeeding 24 hours.

The following is an extract from a letter written by Superintendent Adams, under date of December, 22d, 1883. It tells the story of the well: The Reno well was opened about noon on the 19th of December, 1882. I estimate its first day's production to have been about 3,000 barrels. It filled the two 600-barrel tanks at the wells in less than eleven hours, and for the remainder of that day and a part of the next the oil went on the ground. On the 21st, the pipe lines made connections and began to take the oil away. Owing to the cold weather and scant supply of water, the lines were only able to pump a small amount of oil through their one two-inch line, which extended from the Cooper district to Sheffield. The pipe line men did the best they could, but up to January 1st had succeeded in placing but 5,009 barrels of oil to the credit of the company. We had men working night and day grading for and putting up tanks, until 10,000 barrels of tankage was erected at the well. No account of stock at the well was taken January 1st, 1883. The following statement shows the production of the well for the first year:

	Barrels.
Runs prior to and stocks on hand February 1st, 1883	34,224.70
February production	17,019.41
March do	9,117.80
April do	5,084.62
May do	4,557.27
June do	2,419.29
July do	1,469.24
August do	1,936.03
September do	924.94
October do	2,152.10
November do	1,863.60
To December 19	785.91
	81,554.91
Add 3 per cent. deducted by pipe lines	2,522.31
Total	84,077.22
Oil lost (estimated)	6,000.00
Total production first year	90,077.22

The yield of the well for the 24 hours ending at 7 a. m., December 19th, 1883, was 39.24 barrels.

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to March 1st, 1884.

1882.	Ch'y Gr've. Bbls.	Cooper. Bbls.	Balltown. Bbls.	Total. Bbls.	Daily Av'ge Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
Total to Mar. 1 '84	3,152,761	1,324,110	947,654	5,424,525	8,096

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields, from the time oil was first run in each district up to March 1st, 1884. Cherry Grove has produced 3,152,761, the Cooper district 1,324,110 and Balltown 947,654 barrels. The average daily runs for the three fields for the month of February were 7,526 barrels, an increase of 1,042 barrels over that for January. For the month of February the United Lines have separated the runs of the Henry's Mills section from the Cooper district. Altogether, there are about 50 wells, old and new, in the Henry's Mills district. They are found about the McKinney well, and in the water sheds drained by Pell Brook and Messenger Run. The February daily average runs for Henry's Mills were 2,221 barrels, and for the remainder of the Cooper district 1,522 barrels, making a daily average for the entire Cooper district 3,743 barrels. The Cooper January average was 2,908 barrels. The average daily pipe line runs for the Balltown district for February were 2,815, against 2,808 runs in January. The gushers of the Henry's Mills section made the daily average runs of the Cooper district 835 barrels per day larger in February than they were in January.

Statistical History of Balltown and Cooper Districts.

The gauges of the Balltown and Cooper districts which have been taken by the scouts since these developments became of interest are recorded below. Owing to the illness of Mr. Cappeau and the painful accident which happened to Mr. Tupper only one gauge has been taken of the Cooper and Balltown districts since February 8th.

BALLTOWN PRODUCTION.

Date 1883.	No. Wells.	Barrels.	Rigs.	Drilling.	Total
April 28		983	10	10	20
May 8		970	...	...	18
May 11	11	1406		8	17
May 19	13	1146	7	8	15
May 25	14	1065	7	12	19
June 1	17	1689	7	8	15
June 9	17	1800	5	9	14
June 15	18	1851	5	10	15
June 22	20	2925	10	8	18
June 29	22	2499	11	7	18
July 6	23	2131	11	9	20
July 14	24	2063	7	13	20
July 21	25	2223	8	13	21
July 27	25	1983	9	14	23
August 4	31	3285	13	8	21
August 11	34	3586	12	7	19
August 17	35	4811	11	10	21
August 25	36	3328	11	12	23
September 1	37	3095	8	16	24
September 8	39	3287	11	15	26
September 15	41	4155	11	15	26
September 22	45	5086	8	12	20
September 29	48	4569	9	12	21
October 6	49	6458	12	10	22
October 13	51	4851	11	9	20
October 20	53	4517	5	9	15
October 27	55	3347	4	8	12
November 3	57	4111	3	7	10
November 10	59	3450	4	3	7
November 29	63	5007	6	4	10
December 14	63	3985	7	4	11
December 27	66	3946	3	6	9
1884.					
January 7	67	3232	2	6	8
January 11	67	3483	2	6	8
January 25	69	3367	2	5	7
February 8	71	3894	2	4	6
March 7	73	3548	4	3	7

COOPER PRODUCTION.

Date.	No. Wells.	Barrels.	Rigs.	Drilling.	Total.
February 28	16	1599	..	..	..
March 10	22	3938	..	..	..
March 15	25	1941	..	..	..
March 21	25	1500	..	..	..
March 23	26	2403	..	..	.
March 27	27	2355	..	..	..
March 31	32	3939	..	..	..
April 11	37	4624	19	22	41
April 19	46	3234	14	28	42
April 28	47	4944	13	26	39
May 3	51	4224	..	..	..
May 11	60	4326	14	18	32
May 19	63	4632	17	22	39
May 25	68	4007	14	19	33
June 1	75	5011	13	20	33
June 9	78	4881	19	17	36
June 15	82	4140	15	22	37
June 22	85	4032	13	18	31
June 28	85	3735	15	17	32
July 6	90	3994	15	11	26
July 13	93	3306	18	11	29
July 20	97	3401	21	8	29
July 27	98	3714	17	12	29
August 4	99	3129	20	15	35
August 10	101	3250	18	17	35
August 17	102	3279	16	19	35
August 24	106	3407	14	16	30
August 31	111	3811	13	12	25
September 7	111	3066	13	15	28
September 14	116	2939	13	12	25
September 21	119	3911	11	11	22
September 28	121	3832	10	13	23
October 5	123	4142	13	11	24
October 12	125	3910	11	9	20
October 19	126	3809	7	14	21
October 26	128	3526	6	13	19
November 2	131	3831	3	14	17
November 9	134	3500	3	11	14
November 29	137	3444	4	11	15
December 14	141	3182	5	9	14
December 27	146	3082	6	6	12
1884.					
January 8	147	2782	7	7	14
January 14	148	3018	7	9	16
January 26	153	2906	18	9	27
February 8	154	3310	15	20	35
March 6	165	4307	14	20	34

CRUDE MARKET FOR FEBRUARY.

THE market for crude petroleum succumbed to the heavy onslaughts of the bear clique during the month just closed, and followed the example of other speculative commodities. Opening at 110⅞, this proved the highest price of the month. From this point there was a series of slight variations, until the twelfth. Then the downward tendency manifested all along became accelerated, and increased so rapidly as to almost create a panic. On the 21st 98¼, the lowest point was reached. Confidence in better prices then began to manifest itself, and the month closed at 102.

The development at Henry's Mills has been made the conspicuous figure in bringing about this decline in prices. Exaggerated reports from this part of the field did much to create an insecure feeling among the large holders of oil certificates. And when the price of refined was marked down seven-eighths of a cent on the gallon, without a single note of warning, the disposition to sell became general, and the market went down toward the dollar mark with very little opposition.

The crude market had received much of its strength from the apparently impregnable position of the refined, and when this prop proved insecure, the most sanguine bulls on the situation were staggered by the results that followed. The relative conditions of supply and demand seem to have been entirely lost sight of for the time being, and the trade hangs expectingly on news from this or that large well in a territory confessedly unreliable, uncertain and inadequate to produce any permanent or lasting effect on the volume of crude now above the ground. But it is just these elements of chance and mischance that go to make up the charms that render the goddess of speculation so entrancing and irresistible to her votaries.

THE CLEARANCES.

	February. Barrels.	January. Barrels.
Bradford, Oil Exchange	176,100,000	177,198,000
Bradford, Prod. Pet.	57,164,000	59,968,000
Oil City	213,322,000	247,250,000
New York, N. Y. Pet	197,578,000	286,616,000
New York, National	198,698,000	149,533,000
Pittsburgh	205,948,000	200,917,000
Total	1,048,810,000	1,121,482,000

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THE REFINED MARKET.

THE month opened with an apparent disposition on the part of refiners to maintain the firm position assumed throughout the winter. Figures were marked up at Antwerp, Bremen and London, and the tone of the market never exhibited greater strength. But "all things do suffer a change," and a change came about in the refined market that was as sudden as it was unexpected. On the 14th (St. Valentine's Day) the drop came. It was seven-eighths of a cent decrease on the gallon. A feeling of weakness began to manifest itself, and a general state of inactivity followed. Prices were afterward shaded from an eighth to a quarter of a cent, but the New York market closed with refined for export in fair demand for March delivery at 8⅝ cents.

This unprecedented drop in the price of refined has occasioned considerable comment, and the action of the "powers that be" is still regarded with distrust. The reasons given for this decline are:

1st—Europe buys most freely of refined when there is an advancing crude market. It was impossible to control the price of crude, and the foreign buyer was slow in his demand for the refined article.

2d—The refining interests in opposition to the Standard had been selling refined oil ¼ cent under the regulated price, and the market was lowered in order to work their speedy destruction.

3d—The low attitude of crude made such a large profit in the refined business possible, that other capitalists began to be interested in the manufacture of refined oil and were about to organize new refineries on a large scale. A decline in the price of refined would nip these prospective enterprises in the bud.

Advices from London February 23d, state that the effect of the drop in refined has been most disastrous. Owing to the persistency with which American refineries kept up the prices in face of no export demand, Europe generally felt secure in holding largely, there being scarcely any bear accounts open, and now that the smash in prices has come, the losses are tremendous, one house already, which had the largest account of any, having failed to take up their February oil, thus throwing large quantities back upon an overstocked market. But two houses here seemed to have had any warning from America, and they together sold about 50,000 barrels, the effect of which on a weak market was a drop of ¼d per gallon. The next day, upon receipt of the lower American cablegrams, a further fall of ⅜d was experienced. We are now at about bottom figures, with a steadier market. Refined for March delivery is quoted at 6¼ to 6 3/16d; for April, 6¼ to 6 5/16d; last four months of the year, 6⅞ to 7d.

		New York.	Philadelphia.	Baltimore.	London and Liverpool.	Bremen.	Antwerp.
		Cts.	Cts.	Cts.	Pence.	Marks.	Francs
F	1	9½	9⅜	9⅜	7⅛	8 30	21
S	2	9½	9⅜	9⅜	7⅛	8 20	20⅞
M	4	9½	9⅜	9⅜	7	8 20	20¾
T	5	9½	9⅜	9⅜	7	8 20	20¾
W	6	9½	9⅜	9⅜	7	8 20	20¾
T	7	9⅝	9½	9½	7¼	8 30	21
F	8	9⅝	9½	9½	7¼	8 40	21¼
S	9	9⅝	9½	9½	7¼	8 40	21¼
M	11	9⅝	9½	9½	7¼	8 40	21¼
T	12	9⅝	9½	9½	7¼	8 35	21
W	13	9⅝	9½	9½	7¼	8 20	21
T	14	8¾	8⅝	8⅝	7	8 20	21
F	15	8¾	8⅝	8⅝	7	7 75	19¾
S	16	8⅝	8½	8½	7	7 75	19¾
M	18	8⅝	8½	8½	7	7 75	19¾
T	19	8⅝	8½	8½	7	7 75	19¾
W	20	8⅝	8½	8½	6½	7 65	19½
T	21	8⅝	8½	8½	6½	7 65	19½
F	22	8⅝	8½	8½	6½	7 65	19½
S	23	8⅝	8½	8½	6½	7 65	19½
M	25	8⅝	8½	8½	6½	7 75	19¾
T	26	8⅝	8½	8½	6½	7 75	19¾
W	27	8⅝	8½	8½	6½	7 75	19¾
T	28	8⅞	8½	8½	6⅛	7 75	19¾
F	29	8⅝	8½	8½	6⅜	7 60	19¾

SHIPMENTS AND STOCKS—RUNS.

RUNS OR RECEIPTS.

Pipe Line.	Feb. 1884.	Jan. 1884.
United	1,651,469.24	1,528,408.66
Tidewater	273,853.91	276,318.48
Octave Oil Co	2,629.00	2,689.00
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	4,900.95	5,925.46
Cranberry Pipe Line	11,621.54	12,153.07
Total	1.944,474.64	1,825.494.67
Less oil counted twice as runs	71,842.03	21,965.53
	1.872,632.61	1,803.529.14
Daily average	64,573.54	58,178.36

DELIVERIES OR SHIPMENTS.

Pipe Line.	Feb. 1884.	Jan. 1884.
United	1,456,657.14	1,517,829.69
Tidewater	249,594.68	147,604.58
Octave Oil Co	1,974.00	2,735.00
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	7,441.10	12,498.67
Cranberry Pipe Line	7,501.50	5,860.03
Total	1,723,168.42	1,686.527.97
Daily average shipments	59,419.60	54,404.13

Daily excess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

Pipe Line.	Feb 29, 1884.	Jan. 31, 1884.
United	33,463,939.20	33,280,833.97
Tidewater	2,507,236.78	2.485,166.29
Octave Oil Co	6,333.00	6.104.00
Charley Run	3,986.81	3,986.81
Shaffer Run	28,052.75	28,052.75
Franklin (limited)	16,388.01	18,928.16
Cranberry Pipe Line	15,978.36	11,858.32
Total	36,041,914,91	35,834,930.30

Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	396,004.51

	Receipts.	Deliveries.
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52.737
Daily Average February	65,208	44,352
Daily Average January	65,125	43,813

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to March 1, for the years 1883 and 1884, were as follows:

	1884. Gallons.	1883. Gallons.
From Boston	734,082	636,039
Philadelphia	8,592,393	7,648,420
Baltimore	786,357	1,725,447
Richmond	....	173,449
Total	10,112,832	10,183,355
From New York	51,886,069	58,998,650
Total exports from United States	61,998,901	69,182,005

The appended table from the *Shipping List* gives the total exports of refined, crude, naptha and residuum from New York to foreign ports from January 1st to March 8th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
Great Britain.—London	3,112,527	6,039,284
Liverpool	141,052	1,638,615
Bristol	390,780	243,745
Ireland	752,849	1,135,363
Other ports	1,199,543	999,563
Germany—Bremen	6,736,426	9,231,831
Hamburg	7,319,330	3,755,647
Konigsburg and Stettin	....	326,503
Dantzic	....	....
Other Ports	....	....
France—Marseilles	....	....
Havre	....	....
Norway and Sweden	209,273	401,846
Russia	....	....
Denmark	572,822	889,110
Belgium	5,626,793	8,289,230
Holland	6,548,232	2,789,668
Spain	30,000	20,770
Portugal	45,000	469,272
Gibraltar and Malta	1,508,080	280,970
Italy	452,020	584,469
Austria.—Trieste, etc	680,518	1,068,968
Greece	....	....
Turkey in Europe	150,200	....
Turkey in Asia	356,010	147,180
India	2,419,160	473,000
China, Japan, etc	2,022,130	4,735,990
East Indies	866,000	6,663,450
Africa.—Alexandria, etc. E	503,210	292,480
Canary Islands	....	27,500
Other Ports	353,012	699,593
Australia	417,553	342,184
New Zealand	177,800	191,520
Sandwich Islands	125,100	27,500
South America.—Brazil	808,806	1,072,662
Argentine Confederation	689,850	500,750
Chili and Peru	86,860	512,000
U. S. Columbia	103,045	50,431
Venezuela	103,086	112,804
Other Ports	22,300	56,011
Central America	28,250	30,361
Mexico	237,754	293,575
British North American Colonies	122,878	143,673
Cuba	84,257	32,376
British West Indies and Br. Guiana	295,926	445,450
Other West Indies	214,938	185,487
Total . . . Galls.	45,513,370	55,200,831

CRUDE.

	1884.	1883.
France.—Havre	2,316,416	1,056,406
Marseilles	1,463,532	578,445
Bordeaux	327,513	816,407
Dunkirk	893,603	1,213,085
Other Ports	1,676,869	1,668,836
Antwerp	....	....
Bremen	....	....
Norway and Sweden	....	....
Spain	728,074	1,128,110
Cuba	771,393	505,002
Other Ports	2,257,826	....
Total . . . Galls.	10,435,226	6,966,291

NAPTHA.

	1884.	1883.
Great Britain	830,770	773,375
France	385,606	529,074
Germany	211,090	326,694
Other Europe	....	135,600
Various Ports	9,250	25,050
Total . . . Galls.	1,436,716	1,789,793

RESIDUUM.

	1884.	1883.
To all Ports	503,575	1,124,563

	Gallons.
Total Refined since January 1, actual shipments	48,225,676
do do do do crude equivalent	64,300,901
do Crude do do actual shipments	10,713,926
Grand Total Crude and Crude equivalent . . . . galls.	75,014,827
Same time, 1883	80,567,399

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, February 9th, 1884:

Ports.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	23	20	11	.	.	54
Philadelphia	4	3	3	.	.	10
Baltimore	2	.	.	.	.	2
Boston	.	.	.	.	.	.
Total March 8	29	23	14	.	.	66
Total Feb'y 9	54	11	12	2	1	80

SUMMARY of United Pipe Line statements for January and February, 1884.

	Feb. 1884. Barrels.	Jan. 1884. Barrels.
Receipts, all sources	1,651,469.24	1,528,408.66
Deliveries	1,456,657.14	1,517,829.69
Gross Stocks, end of month	35,478,250.78	35,169,769.55
Sediment and Surplus	2,014,311.58	1,888,935,58
Total liabilities end of month	33,463,939.20	33,280,833.97
Outstanding Acceptances	27,920,564.75	27,668,523.25
Credit Balances	5,543,374.45	5,612,310.72

Of the above receipts for February, 71,842.03 barrels were received in iron tanks.

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for February, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of February		2,485,166.29
Quantity of crude petroleum at close of February	2,636,461.23	
Less sediment and surplus	129,224.45	2,507,236.78
Receipts during February		273,853.91
Deliveries during February		249,594.68
Outstanding certificates, accepted orders, etc		2,018,000.00
Credit balances		489,236.78
Total liabilities February 29, 1884		2,507,236.78

JANUARY, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of January		2,359,626.20
Quantity of crude petroleum in custody at close of January	2,603,779.12	
Less sediment and surplus	118,612.83	2,485,166.29
Receipts during January		276,318.48
Deliveries during January		147,604.58
Outstanding certificates, accepted orders, etc		2,044,000,00
Credit Balances		441,166.29
Total liabilities January 31, 1884		2,485,166.29

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. Month.	Runs. Bradford.	Runs. Allegany.	Runs. Outside	Total. Daily Runs
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

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THE PRODUCING REGION.

ALLEGANY FIELD.

The experimental wells drilled in Clarksville in the vicinity of the Heuston & Brecht well on lot 10 disappointed their projectors and all parties who have anchored money in the Clarksville section. The wells which have been drilled on lots 10, 2 and 3, indicate that the productive area will assume insignificant proportions. The Warner & Gleason well, 96 rods northeast of the Heuston & Brecht well, has a daily yield of four barrels. The Canfield & Nutting well, on lot 2, and the Empire Gas Co.'s last, on lot 3, limit the scope of territory to the eastward. The United Lines completed a pipe line to the south Alma country during February, and some of the stock oil at wells in this section has swelled the runs. Operators are moving at a slow pace in the vicinity of the O'Connor well, on 106. A few test wells are under way in Willing. The country between the old development and the well on 106 has only disclosed a thin sand rock, capable of affording light wells. A portion of it is still in an experimental condition. Ira W. Shirley completed a well on lot 107 which, at the present writing, March 6th, has not been shot. It is reported to have made a showing about like the Shamrock No 1, on lot 106. The Thornton & Dobbins No. 1, on lot 106, has ceased to flow through a two-inch pipe. Along the eastern boundary line of lot 62 Willing, Howard, O'Connor & Shanley are drilling a well, which will show how far the streak extends in a northeasterly direction from 106. This well is a mile and a half in advance of present developments, and is sometimes mentioned as the Fords Brook well. The Hardison well, on lot 28, South Alma, is pumping about three barrels daily. The Last Chance Oil Co. are building a rig on lot 26, South Alma.

Near the village of Gains, in the western part of Tioga county, C. B. Whitehead, of Bradford, is interested with other parties in drilling a test well. On the 6th inst. they were down 150 feet. This venture is about five miles southwest of the Westfield well. At present there is nothing to be discerned in the Allegany outlook which would lead one to expect that its present production will be held during the year 1884. There were 76 wells added to the producing list in this field in February, having a new production of 645 barrels. The count March 1st showed 55 new rigs, 50 old rigs and 69 drilling wells, a total of 174 for field operations, showing a decrease of 12 from the February 1st total.

BALLTOWN.

The Balltown pool has attracted very little attention since the first of the year, but has received as much recognition from the oil trade as the volume of crude which it puts out monthly entitles it. Up to the first of March the Balltown district had produced 947,654 barrels of oil. The three wells finished in February and March at the southwestern end of the belt show a lighter grade of territory than has been found northeast. According to the reports of the scouts who have watched the wells drilled into the sand, May, Kelley & Grandin's Nos. 19, 20 and 21 have not done at their best above 30 barrels per hour. Nos. 19 and 20 are 50 rods, and No. 21 is 100 rods in advance of No. 18. This last mentioned well did 40 barrels per hour while the wells southwest of it have not shown a record above 30 barrels. The three last wells demonstrate a lighter grade of territory. Lines drawn parallel with the central line of the belt, through the most easterly and westerly wells, give the belt a width of 76 rods at the southwestern wells. While it seems to have the expected width, it does not afford the crude jugular vein. No. 21, the last well finished, is on a 48° line drawn from No. 18. This bearing throws it on the open space between Nos. 19 and 20.

For the 24 hours ending March 7th, the 73 wells in the Balltown field were producing 3,548 barrels. From February 8th to March 7th, 25 torpedoes have been used in the district. The average daily pipe line runs of this field for February were 2,815 barrels.

The Syndicate No. 2, about four miles south of the Balltown development, on warrant 5,104, had traces of oil in the Clarion sand, but was dry in the Balltown formation. It is situated 1,000 feet down the North Branch of Salmon creek. The first well showed oil and gas in the Clarion county sand.

The Shannon well is situated on warrant 5,134, on a 45° line southwest of the Cooper development. It is northwest of the Cornwall wells, which were drilled on the same warrant. About March 1st the well was shut down at a depth of 1,800 feet, and no crude traces had as yet been discerned. J. M. Arter has a rig up on lot 49 of warrant 3174, Forest county, northwest of Marienville.

THE BRADFORD FIELD.

Up to the first of the year 1884 the Bradford field had produced about 100,000,000 barrels of oil. The estimates made by Mr. John F. Carll, up to the close of the year 1882, added to the pipe line runs for 1883, show that 100,000,000 barrels of oil have been saved of the product of the northern field. Besides this amount, no inconsiderable quantity coursed down the hillsides of McKean during the flush days of the development.

Outside of the drilling at Windfall station and the country west of LaFayette Corners and southwest of Big Shanty, the experimental work in the outskirts of the Bradford field does not attract any attention. The Morse & Allen well on the Hartsone farm made as good a showing as the Pioneer well on the Winchell farm. The well on the Winchell farm filled its first 250 barrel tank in 28 days, and the second in 41 days. At the well on the Hartsone farm, they found the usual two layers of sand with the intervening strata of slate. Nothing of a bearish character is expected from the work of this region. Southwest of the Big Shanty section old-time operators are looking for a pool which will balance or make symmetrical the shape of the northern field. They are prospecting for a pool which shall have the same position with the western side of the field that the Kinzua pool holds with the eastern. Both wells which are to test this theory are situated in the water basin drained by Thunder Brook. The Thunder Brook Oil Co. are drilling on the southeastern corner of warrant 3412. On the northeastern corner of warrant 4914 Kearns & Kennedy are urging the drill to establish the truth or falsity of the theory which they entertain. There was a slight increase in new operations in the Bradford field during February. During the month 76 wells were completed, producing, on the last day of the month, 690 barrels. On the first of March there were 80 new rigs up or building, 23 old rigs which had been standing for 30 days or more, and 96 wells drilling, making a total of 197 against a total of 184 February 1st.

COOPER.

Twelve wells were completed in the Henry's Mills section during February, producing on the last day of the month 1,620 barrels. It is now admitted that the maximum has been reached for the yield of this section, though the use of torpedoes and the new wells to be completed are likely to raise the yield at intervals to the level reached in February. All the wells which have been drilled and located at Henry's Mills since the McKinney strike can be inclosed by a rectangle having an area of 125 acres. The sand rock underlying this extent of territory will not afford more than 250,000 barrels of oil. The test of figures applied to any of the white sand pools of Warren and Forest counties shows that the trade is unduly exercised over the spasmodic gushing of the spouters, which ease the pressure of gas and oil on the porous rock. H. B. Porter's No. 5, stimulated by a shot, blew off the casing head and flowed in the air at a heavy rate for a number of hours. The first gauge obtained after the shot, registered over 100 barrels per hour. The McCalmont Oil Co. completed four good wells, two west of the Porter purchase, and the others north of the McKinney wells. Shank & Emery's No. 12, along the western boundary line of lot 438, and 1400 feet from the southwestern corner of the lot, affords quite a large amount of gas and is a light producer.

Cochran Bros.' test well, along the southern boundary line of lot 407, and about 95 rods from the southeastern corner of the lot, was drilled into the sand March 8th. When the rock was perforated to a depth of five feet the well filled up 60 feet with oil. The field men reported that deeper drilling did not improve the well. The sand is red in color, and not like that which affords the gushers. The failure of this well proves the non-existence of the parallel and western streak.

Horton, Crary & Co. are sinking an experimental well along the southern line of lot 368, about 80 rods west of the Egan dry hole, on the same lot. The average daily pipe line runs of the Cooper and Henry's Mills section for February were 3,743 barrels. On the first of March there were 13 rigs and 25 drilling wells in the Cooper district.

WARREN AND FOREST.

The white sand pools of Warren and Forest counties are becoming better understood by the trade, and consequently losing their influence on values. The Henry's Mills development swelled the February average daily pipe runs 835

barrels above those of January, a small amount of oil to raise a mild furore in speculative circles. In Glade, Clarendon and Tiona 48 wells were finished in February, an increase of 18 over January. On the first of the present month the volume of new work in these sections was unchanged from that of February 1st. Several wildcat wells, remote from the developments, and either within or near the boundary lines of these counties, have lately been rated with the dry holes. The Stillson Hill well, drilled by Warren parties, has a dusty record. A hard sand was found at a depth of 1,203 feet. The drill stopped at a depth of 1,420 feet, when the well was abandoned as a failure. The experimental wells sunk in the northern tier of townships of Warren county have not disclosed the existence of crude in paying quantities.

G. H. Dimmick's test well, on lot 152, McKean county, was located northeast of the Sheffield gas wells, with the hope of finding gas or oil. The wells drilled east and southwest of the gassers did not show oil, and it was thought that some might exist near the gas pressure at the northeast. They stopped drilling at the Dimmick well in slate, pulled the casing, and have abandoned the venture as a hopeless duster. The well drilled for gas at Ridgway found salt water, and was left by its projectors when a depth of 2,200 feet had been reached. The Union Oil Company's well, on the Harmon lands, which was reported very light in the last issue of the AGE, under the influence of a heavy shot, struck a gait as an eight or ten-barrel producer. The Wesley Chamber's well, on the Stewart property, has drawn the attention of the speculative trade to the Wardwell development. It is a half mile northwest of the most northerly of the King & Magee wells, and three-quarters of a mile southwest of the Reed or Union Oil Co.'s Nos. 3, 4 and 6. It is 110 rods west of a north and south line drawn through the Reed or Union No. 2. Sand was struck at the Chambers well March 7th. The well was drilled a short distance into the sand, and at the present writing, the 10th, is shut down and under guard, though for what reason the well is kept under surveillance only Wesley Chambers can divine. It will require more drilling to determine whether it is an enlargement of the Wardwell pool or demonstrates a western streak. Possibly there may be a connection between this well and the old Glade field. The Calhoun well on warrant 5,545, two and three-quarter miles northeast of the Wardwell producing wells, is acknowledged to be a duster. Between the Calhoun well and the Allegheny River, P. M. Smith and The Anchor Oil Co. are drilling a well on the Bradford farm, Steelsmith is drilling on the McNalley, and Johnson & Co. are looking for a well on the Shirley. These wells will be important in showing how far the pool extends to the northeast from the river.

The owners of the Markham well, along the northern boundary line of lot 591, Cherry Grove, thought they were sitting on a slumbering volcano for a month, but the vibration of the drill proved it to be a mole hill. The well was drilled into the sand during the first week in January. The top of the rock was of superior texture, but it failed to improve with deeper drilling, and when it came to be opened up there was no gushing response of crude. The owners do not expect anything better than a well ranging in calibre from three to five barrels.

There is some interest manifested in the country west and parallel with the Cherry Grove belt.

THE LOWER COUNTRY.

In the lower country more activity has been manifested during a few months past than for a long time. The points where the most work has been done are at Baldridge, at Emlenton and in the Cranberry district. The opening of what is known as the "Wallace pool" at Baldridge by the Phillips Bros. has led to some activity in that quarter.

The old Baldridge pool, although very expensive territory to drill was soon developed and apparently effectually cut off by a line of dry holes on the northeast. In this field the oil sand was found 1,700 to 1,800 feet below the surface, and a heavy salt water vein necessitated casing in many instances to a depth of 1,200 feet. But, after a line of dry holes had been drilled along the northeast border of Baldridge, it was a surprise to the operators in that section when Phillips Bros. discovered a good producer on the Wallace tract, still farther to the northeast and beyond the row of dusty failures. Another surprising feature is the fact that the deep salt water vein does not exist in the new pool. Sixteen wells have already been drilled in this new territory, and none of them found any salt water in the deep rocks. The character of the wells has steadily improved towards the northeast, and as a result, the search for leases has become lively. Phillips Bros. have secured several thousand acres, some of it in fee, and A. Shidemantle has leased several hundred.

Phillips Brothers have a strip of fifty acres of the Wallace tract; it is twenty-nine rods in width

and extends along the western portion. Shidemantle has a similar strip adjoining them on the east, and the Fisher Brothers, of Pittsburgh, who have just entered the field, have secured the balance of the tract, a piece 140 rods wide and 280 rods long. The price paid for this portion of the tract was $12,000 and a quarter royalty.

Jas. S. Cooper, of Parker City, has started a well on the Pierce property, east of Phillips Bros.' wells, on the McCalmont farm, which joins the Wallace tract on the north. But the most important well in the field is Phillips Bros.', on the Hailey farm, more than a mile east of present developments.

Phillips Bros. have another noteworthy test well in Butler county. It is located one and a half miles west of St. Joe, and a mile in advance of developments on the recently discovered fourth sand belt, which crosses the old third sand, eastern belt, at St. Joe, running, as far as developed, on an exact east and west line. Phillips Bros.' Sailer farm well is a little south of this line, but not so far as Showalter Bros. & Hartman's duster, near the St. Joe depot, which was completed the last of January. At last accounts this well was in the top of the fourth sand, with a good showing, and shut down for tankage and other preliminary arrangements for the opening ceremonies. It has attracted considerable attention.

At Emlenton the territory is very light, but being on the site of the town, every lot-owner is consumed by the desire to become a producer. The result is seen in very active drilling for four and five-barrel wells. North of Emlenton, in Rockland township, Levere Bros. found a dry hole at Keefer's factory, and still further north, near Davis' Corners, Lee & Co. finished a duster toward the end of the month. Dale Bros. are now drilling a wildcat east of Davis' Corners. A couple of wells are drilling between Scrubgrass which has been modernized to Kennerdell and Bullion.

The gushers of Dale Bros. and Dale & Smullin, in the Cranberry district, led to a rather active campaign in that section. Late in January a very light producer was developed between two of the largest gushers, and the month of February witnessed the completion of the Cratty duster, only a short distance in advance of the big wells. Near the dividing line between the third sand region and the western second sand, McCalmont & Co. finished a dry hole last month, and Fisher Bros. completed a duster on Tract 75, north of the McCalmont, about three-fourths of a mile. The list of operations in Cranberry will probably be reduced forthwith, as these last dusters furnish the final demonstration of the spotted and uncertain character of the territory.

THE SITUATION IN CANADA.

At the end of the first week in March the situation may be summed up as follows: Price of crude at wells, 80 to 83 cents a barrel. Refined, 11¾ cents a gallon. Home consumption increasing as shown by shipments of refined. Stocks above ground estimated at not more than 325,000 barrels, with production variously rated at from 30,000 to 40,000 barrels per month and decreasing. The shipments from the region for the month of February, reduced to crude equivalent aggregated 42,416 barrels. The quantity of illuminating oils imported by the Dominion of Canada (exclusive of British Columbia) was 331,553 gallons, during the month of January 1884.

PETROLEUM, THE SALT OF THE BIBLE.—It seems to be frequently referred to in the Bible, though Biblical chemistry is much obscured by bad translation, * * Many things become comprehensible if we take the generic term salt, and apply it to petroleum and its residue, asphalte. Lot's wife, if converted into a pillar of common salt, would have been washed away by the first shower of rain; but a pillar of asphalte, even as a memorial of her, would have been an enduring monument, and might have been seen by Josephus and his contemporary, Clement of Rome, both of whom declare they saw it. So also when we are told by Mark that 'every one shall be salted with fire, and every sacrifice shall be salted with salt,' I see a meaning only when I recollect that, in regions containing petroleum, sacrificial fires were fed with this fuel to aid the burning. In like manner, when Matthew likens the blessed, first to salt, and immediately afterwards to a lighted torch (for candles, as translated, were then unknown), I see the connection in his mind. He had just said that salt which had lost its savour was only fit to be trodden under foot of men. Now salt never does lose its savour, and is never fit to be trodden under foot. But petroleum does lose its essence by exposure, and, out of the residue, the ancients used to make asphalte pavements, as they do at the present day. I only give some reasons for my belief that the salt of the Bible, in its generic sense, was often applied to petroleum; but I admit at the same time that the readers of *Good Words* ought not to attach much importance to my opinions on any subject of Biblical criticism.—*Sir Lyon Playfair, in Good Words.*

FEBRUARY OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN FEBRUARY, 1884.

Allegany Field.

Scio.

Lot. Owner.	Barrels.
2, Farrel & Snyder No 9	12
4, Minnow Oil Co No 4	5
11, Griffin & Co No 6	10
11, Duke & Norton Oil Co No 3	10
11, O'Harra & West est	5
Wells	5
Production	42

Alma.

4, Chamberlain & McConnell No 7	5
3, M J McMullan & Co No 4	10
17, Carlin, Bussell & Co No 10	10
18, Manhattan Oil Co No 12	10
18, do do do 13	10
Applebee Bros.	10
18, H L McMullan No 7	5
18, G M Barney No 8	6
20, Straight & Hostetter No 12	10
20, Willets & Duke No 8	10
21, Finegan No 10	10
21, do No 11	10
24, Vance & Horton No 9	10
24, Sutherland & Co No 4	10
24, New Milford Oil Co No 5 est	10
24, F H Parkman	10
38, E T Anderson & Co No 4	12
38, do do do No 6	12
88, Koch Bros No 3	15
23, do do No 3	10
38, Weiser Bros No 2	12
38, do No 4	8
38, do No 20	12
38, Preston Bros	8
40, A T Palmer No 5	5
40, do do No 7	15
107, Ira W Shirley est	5
124, L Willets & Co est	8
140, Willets & Co est	6
142, Bolivar Oil Co No 2	10
142, Elliott & Co	3
142, Willets & Duke No 3	8
142, do do No 4	8
143, Ira W Shirley No 14	5
Wells	34
Production	308

Wirt.

25, Fertig Bros No 2	10
Smith & Bartlett	5
Maxon Farm, Applebee & Co No 1	10
Wells	3
Production	25

Bolivar.

6, Murphy, Fischell & Co	8
6, Jordan Oil Co No 2	10
6, Star Oil Co	15
7, J D Downing No 8	8
7, W & J Duke No 4	10
7, do do No 14	15
7, Coast Oil Co No 21	10
7, do do No 22	10
7, do do No 23	12
7, Montgomery & Stitt No 4	10
8, Empire Gas Co No 1	6
11, O P Boggs No 3	5
15, Wellman, Miner & Smith No 6	10
23, Johnson & Conroy No 5	10
23, do do No 7	10
31, Hydrick No 3	12
63, H F Northrup & Co	10
63, Whitney Bros No 7	10
Wells	18
Production	181

Clarksville.

2, Canfield & Nutting	dry
3, Empire Gas Co No 1	dry
13, Cuba Gas Co	gas
18, Mohan Oil Co No 6	10
18, McKelvry & Co	10
10, Gleason & Warner	5
Wells	6
Production	25
Dry	3

Genesee.

8, I Willets No 49	12
14, Durkee & Co No 5	7
15, McCalmont Oil Co No 31 est	10
22, I Willets No 9	5
23, Emery Oil Co No 9	10
22, do do No 10	10
23, McCalmont Oil Co No 6	10
Wells	7
Production	64

Miscellaneous.

Willing lot 73, James Thornton	gas
Franklinville, Olean Oil Co	dry
Shingle House, Doyle & Co	dry
Wells	3
Production	—
Dry	3

Bradford Field.

East and West Branches.

Farm. Operator.	Barrels.
Beardsley, Bronson & Curtis	5
Yeomans, Westmoreland Oil Co	8
Bingham, G H Van Vleck No 27	10
Dent, P C L & P Co, No 56	12
do do do No 57	15
do Whitney & Wheeler No 34	20
Brown, Barnsdall Bros	6
Craft, Roy & Archer No 9	8
Lovejoy, Willoughby & Thayer No 3	8
Kissam, Beech, Atwater & Co No 3	5
do do do do No 4	5
Havens, P C L & P Co No 5	4
N W M C, Union Oil Co No 19	8

Quintuple.

161, W H Bradley	10
284, Splain & McDonald	10
Wells	15
Production	134

Kendall Creek.

Moore, A S Palmer No 7	8
Bradley, Zane & Taylor No 10	6
Melvin, P. C L & P Co No 79	8
do do do No 80	6
Chamberlain, Thompson & Lane No 6	8
E T Co Forest Oil Co No 29	5
Borden, Roth & Peffer No 16	6
do Bryan, Hopkins & Co	6
do Bradley & Co	6
Bingham, Columbia Oil Co No 19	8
Duke, Suhr & Shopperle	5
Wells	11
Production	72

Foster Brook.

E T Co, Boyne, Penny & Coleman No 3	10
do do do do No 4	10
do H L Blackmarr & Jones No 13	8
do do do do No 14	10
do F L Blackmarr & Post	8
do do do do	10
do A E Jones No 2	10
Willets, I Willets No 26	6
Borden, R W Argue No 9	10
C B & H, Charles Wilder No 2	10
do F A Smith No 4	10
do J D Wolf	8
Wells	12
Production	110

Four Mile.

Van Campen, W M Brown	10
do do	10
do Nelson & Jones No 3	8
Zaph, Franchot Bros No 4	10
Widow Carrol, Thomas Kervin No 3	8
Moultrous, John Coast, No 7	10
Stevens, Wm Chambers No 2	8
do William Stevens No 2	8
Carroll, D W Ward	8
Wells	9
Production	80

Indian Creek.

Henry Loup, Levens, Fisher & Swan No 5	10
do do do do No 6	10
Loup, Hazelwood Oil Co No 45	10
Barse, Geo V Forman, agt U O Co, No 32	8
do Sloan & Son	10
Keating, Forest Oil Co No 44	10
Ellibg, do do No 2	12
Hamlin, Miller & Odell No 2	10
J H Campbell, A J Thompson & Forest Oil Co	6
Hartson, Morse & Allen est	5
Dodge, Shear Bros No 4	8
Loup, Keystone Gas Co	8
Sparger, Bradford Oil Co No 8	8
do do do No 9	10
Zimmer, C Y White & McKinney No 3	8
Widow Rixford, White, Douglas & Co	5
Hill, Bovee & Duck No 3	6
Keating, J L McKinney & Co No 29	10
Weston, do do do No 34	10
Hamlin, Triangular Oil Co	5
Wells	20
Production	169

Cole Creek.

Simpson, The Union Oil Co No 27	20
Forman, do do No 28	20
Bingham, lot 418 do do No 22	10
do lot 415 Johnson & Co No 117	12
Wells	4
Production	62

Kinzua.

Bingham, 129 P T & W C Kennedy No 3	10
do The Union Oil Co No 49	40
do H P Malone No 22	15
Butts, Mumford & Shehan	dry

Kinzua Village.

Falconer, Book & Gartlan No 3	3
Wells	5
Production	68
Dry	1

Warren and Forest.

Glade and other Towns.

Tract. Owner.	Barrels.
Wardwell, Benedict & Robinson No 5	12
Mowris, King & Magee No 4	15
Cobham, Union Oil Co No 5	15
do do do No 6	12
Harmon, do do No 1	5
Meashon, Anchor Oil Co No 4	10
Irvine, do do No 2	15
Overly H & S, Wesley Chambers No 2	5
John Hahn, do No 1	4
Beatty, David Beatty No 20	5
Leonhart, do No 3	5
do do No 4	5
Davis, Davis Bros No 5	5
Cogswell, Law & McKelvey	dry
Roy, James Roy No 9	4
Uhl, Johnson & Co No 2	5
Magee, Jos Magee	4
Eichoff, Eichoff	5
Wells	18
Production	131
Dry	1

Clarendon.

36, Clark & Armor No 1	3
36, Borchert & Smith No 3	4
53, The Union Oil Co No 15	5
55, D Beatty & Son No 30	5
55, do do No 31	5
464, Fred Hue & Co No 1	5
495, W Benedict No 11	5
496, Riddlesperger & Co	6
107, Soult & Dower	5
496, Mattison & Co	6
494, Kemp & Solliday	5
526, F G Keatley No 1	5
561, Rockwell & Co No 4	15
555, O'Donnell & Nickel No 2	5
611, (Cherry Grove) Forest Oil Co No 16	8
Wells	15
Production	87

Tiona.

83, Clark & Foster	dry
109, J S Patterson No 4	8
109, Little Toby Oil Co No 7	6
110, Fertig & Henne No 4	6
110, do do No 5	6
110, do do No 6	6
159, do do No 10	6
165, Wm Pagett No 11	8
159, Mandell Oil Co No 2	5
160, J S Patterson No 11	6
160, do do No 12	8
160, do do No 13	6
165, Gerner Brothers	4
200, Wesley Chambers No 2	5
242, Solliday & Co	3
Wells	15
Production	83
Dry	1

Cooper District.

Henry lands, Syndicate No 14	20
Cooper Hill, M W S & Co No 30	25
369, J M Clapp No 3	8
Henry, West Porter, McCalmont Oil Co No 1	130
do McCalmont Oil Co No 2	135
439, McCalmont Oil Co No 6	275
439, do do No 7	175
438, Shank & Emery Nos 9 and 12	215
Henry, H B Porter No 5 est	125
do do No 6 est	100
do do No 8 est	100
do do No 10	65
Williamson, J L McKinney & Co No 4 est	175
do do do do No 9	125
Wells	15
Production	1673

Balltown.

5236, May, Kelly & Grandin No 19	30
5236, do do No 20	40
4821, Balltown Oil Co No 17	100
4821, do dc No 18	5
Wells	4
Production	175

Miscellaneous.

Brokenstraw twp, lot 233 Murphy & Co	dry
South Valley twp, lot 36 Vandergrift & Co	dry
Garland, Dude Oil Co	dry
Ridgway, Ridgway Gas Co	dry
Wells	4
Dry	4

Lower Country.

Venango.

Farm. Operator.	Barrels.
Hughes, Fisher & McLaughlin	7
Tract 75, Fisher Bros	8
Wolfe & K, Wolfe & Kugler	6
Tract 47, Fisher Bros	12
Kauffman, P H Judd & Co	10
do A P Dale	9
Flinchpaugh, Dale Bros No 18	65
do do do No 19	23
McKinley, Trax & Co	4
Rembold, Dale & Smullin	4
do Woods & Graham	20
McCalmont, McCalmont & Co	10
do Richardson & Co	5
Diamond, Loots & Co	3
Cubbison, Roess & Goettle Bros	12
Oberly, Oberly & Co	2
Keefers factory, Levere Bros	dry
Bullion, McCalmont & Co	10
Davis Corners, Lee & Co	dry

Vicinity Emlenton.

Gates, A D Gates	5
McCullagh, Porterfield & McCombs	5
Catholic church lot, Klingler aud others	4
Weller, E Goodrich	4
Fox, Martin	3
Flynn & M, Flynn & Mackin	5
Foster, Foster	15
Royal, Grant & Co	dry
Wells	27
Production	251
Dry	3

Clarion.

Mehrton, F J Harley	5
Keating, William Seba	dry
Berlin, J C Bartlett & Co	6
Lehigh, Pye & Co	4
Wells	4
Production	15
Dry	1

Butler and Armstrong.

McCalmont, Phillips Bros No 4	40
Wallace, A Shidemantle No 3	15
da do No 4	20
Husselton, Baldridge Oil Co	4
Gillespie, Westerman Bros	5
Marshall twp, McCallin & Co	dry
Wells	6
Production	84
Dry	1

DRILLING WELLS, RIGS UP AND BUILDING FEB. 1.

Allegany Field.

Scio.

Lot. Owner.	Depth.
1, Pickering & Smith No 7	300
1, do do No 8	rig bldg
2, Waco Oil Co (old)	rig
2, Coast Oil Co No 28 (old)	rig
2, do No 29 (old)	rig
2, do No 30 (old)	rig
3, Frank Campbell	rig
3, Coyle & Co (old)	rig
4, Charles Taylor (old)	rig
4, Minnow Oil Co No 5 (old)	rig
4, do do No 6	rig
11, R Carrol No 4	100
11, Griffin & Co No 7	300
11, do do No 8	rig
11, Lowcomer & Turner (old)	rig
11, Duke & Norton Oil Co No 4	rig
12, Allen & Morse No 1	700
12, do No 3 (old)	rig
47, A J Applebee	rig bldg
50, The Union Oil Co No 5	800
New rigs	6
Old rigs	9
Drilling	5
Total	20

Alma.

1, Phillips Bros No 10	800
1, do No 11 (old)	rig
1, Manhattan Oil Co	rig
3, M J McMullen & Co	rig
3, do do do	rig bldg
4, Crane & Co (old)	rig
4, Matson & Thompson No 9	500
4, Fertig Bros No 5	rig bldg
17, Carlin, Bussell & Co No 10	100
17, Col Scott No 5	300
17, New Milford Oil Co No 4	sand
17, do do No 5 (old)	rig
18, H L McMullan	rig bldg
20, Coast Oil Co No 17	drilling
20, do do No 18	rig bldg
20, Willets & Duke No 9	rig
20, do do No 10	rig
21, Finigan & Co No 12	rig
23, Dow & Browning No 6	drilling
24, Vance & Horton (old)	3 rigs
24, New Milford Oil Co No 6 (old)	rig
24, do do No 7 (old)	rig
37, Wivel & Co	rig bldg
38, E T Anderson & Co No 7	200
38, do do do No 8	rig
38, Koch Bros No 3	rig bldg
38, Weiser Bros No 5	500
38, do No 6	100
38, do No 7	rig
38, do No 10	200
38, do No 22	800
38, do No 23	100
38, do No 24	rig bldg
39, McCoy & Weeter	500
40, A T Palmer No 8 (old)	rig
40, do No 9	rig bldg
44, Torrey & Co	rig bldg
66, Crawford & Co	rig bldg
71, Willets	sand
86; O'Connor	rig bldg
88, Duke & Co (old)	rig
106, Thornton & Dobbins No 2	drilling
142, Bolivar Oil Co No 3 (old)	rig
142, Willets & Duke No 5	500
142, do do No 6	100
142, do do No 7	rig
142, William Chambers No 3	drilling
Near Crocker well (unknown)	rig
Pikeville, Harkness	sand
New rigs	20
Old rigs	12
Wells drilling	20
Total	52

Wirt.

33, Wellman, Miner & Fuller	drilling
33, do do	rig
Nile, Nile Oil Co No 3	150
52, [Isaiah Jordan] Lester & Jordan	800
57, Wm Coast	100
New rigs	1
Wells drilling	4
Total	5

Bolivar.

6, Jordan Oil Co, No 3	rig bldg
6, I Collins No 3	drilling
6, A P Tanner No 1	500
7, J D Downing No 7	sand
7, W & J Duke No 5 (old)	rig
7, do No 6	rig bldg
7, Coast Oil Co No 18	400
7, do No 20	rig bldg
7, do No 24	rig
7, do No 25	800
7, do No 26	100
7, do No 27	rig bldg
7, Coast Oil Co No 4	800
7, do No 5 (old)	rig
Crandall, W & J Duke	100
do do do	rig bldg
7, A A Hopkins No 16 (old)	rig
8, Empire Gas Co No 2	rig
15, Kelly & McMurray No 1	rig bldg
15, O P Boggs (old)	rig
15, Wellman, Miner & Smith No 7	800
15, do do do No 8	200
15, do do do No 9	rig bldg
15, Empire Gas Co [Woodard farm]	sand
15, do do [Sawyer farm] No 2	rig bldg
Howe farm, Empire Gas Co No 3	800
23, H Stewart	rig bldg
24, H M Ernst No 5	drilling
24, Riley Allen No 7	300
23, Johnson & Conroy No 8	400
23, do do No 9	300
23, do do No 10	rig
30, H Stewart No 2	800
30, do No 3	rig bldg
30, Hogan, Murphy & Basch	800
31, Hydrick No 3	400
31, Fisher Oil Co No 8 [old]	rig
38, Hanley & O'Shea	800
38, do do	rig bldg
45, Adams & Co	rig
45, do do	rig bldg
63, Whitney Bros No 8	500
63, Columbia Oil Co No 16	900
New rigs	17
Old rigs	4
Drilling	22
Total	43

Clarksville.

9, Heuston & Brecht No 4 (old)	rig
9, Merritt & Co [old]	rig
9, Childs, Hill & Co	600
9, P T Kennedy No 12	200
9, H Werthman	100
10, Whipple Bros No 6	100
10, do do No 7	rig
10, Dalrymple & Bro	200
Angell Oil Co	rig bldg
17, William Cranston No 6 (old)	rig
17, John McCool	rig bldg
28, Patterson, Pentzer & Love	rig
New rigs	4
Old rigs	3
Wells drilling	5
Total	12

Genesee.

7, Rollin Dow	800
A T Palmer No 1	drilling
8, I Willets No 51	drilling
8, do No 52 (old)	rig
8, do No 53 (old)	rig
8, do No 54 (old)	rig
14, Chauncey Oil Co No 16 (old)	rig
14, Empire Gas Co (old)	2 rigs
14, Robert Cook (old)	2 rigs
15, McCalmont Oil Co No 31	300
15, do do No 29 (old)	rig
15, do do No 21 do	rig
15, do do No 22 do	rig
15, do do No 23 do	rig
15, do do No 24 do	rig
16, Lancy Bros No 8	rig bldg
21, Empire Gas Co No 2	800
22, I Willets No 11	500
22, do No 12 (old)	rig
22, do No 13 do	rig
22, do No 14 do	rig
22, do No 15	rig
23, Hughes & Coughlin No 9	sand
23, Emery Oil Co No 11	drilling
23, do No 12 (old)	rig
Champlain, Emery Oil Co No 6 [old]	rig
23, Chauncy Oil Co	rig bldg
29, N C Clark	sand
29, William Cranston [old]	rig
31, Hugh McMullan No 24	drilling
31, do do (old)	rig
31, do do	rig bldg
38, S E Young & Co [old]	rig
New rigs	4
Old rigs	21
Drilling	10
Total	35

Miscellaneous.

Franklinville, Franklinville Oil Co	drilling
Wellsville, Palmeter & Co (old)	rig
Tioga county, Whitehead & Co	rig
Willing, lot 62 O'Connor & Co	drilling
do lot 78 O'Donnel & Co	rig
North Whitesville, Stowe & Co	rig
Friendship, Higgins & Co	drilling
New rigs	3
Old rigs	1
Wells drilling	3
Total	7

Bradford Field.

East and West Branches.

Farm. Operator.	Depth.
McKinsey, McClure & Co	600
Patten, do do	rig
Kellogg, Westmoreland Oil Co	rig bldg
Miller, J W Sherman (first sand)	500
Watkins, Bunnell & Dale	drilling
Clark, Chapin & Chapman	500
do do do	rig
Willis, McCray Bros No 29	rig
Hinchey, S W McMurray & Co No 1	100
Bingham, G H Van Vleck, No 24 (old)	rig
do do No 28	900
do do No 29	rig
do lot 168, R J Straight No 8 (old)	rig
do lot 197, do do No 5	500
do lot 178, F W Andrews No 10	1600
Jewett, Hamsher, Weaver & Co No 9	sand
Dent, P C L & P Co No 58	1500
do do do No 59	1000
do do do No 60	rig
do do do	rig bldg
do Whitney & Wheeler No 35	1800
do do do No 36	350

do do do No 37 . . . 100
do do do No 38 . . . rig
do Emery Oil Co No 22 . . . . . sand
King, Barnsdall Brothers No 2 200
do do do . . . . rig bldg
Tuna, do do . . . . rig bldg
Owens Purchase, Hall & Slocum . . . 400
Wagner, Whitney & Wheeler . . . . . rig bldg
Taylor, Atlas Oil Co No 7 . . . . . sand
do do do No 8 700
do do do No 9 . . . . . rig
Hawkins, P C L & P Co No 23 . . . . sand
do Union Oil Co No 13 500
Taylor, Herrick & Suttle . . . . . drilling
McCartney, Newman & Co 400
Lovejoy, Willoughby & Thayer No 4 . 100
do do do No 5 . rig
Bingham, Bayne, Fuller & Melvin No 59 1500
Paul, do do No 3 rig
Kissam, Wm Fleming 100
Fox lands, Roth & Taylor . . . . . rig bldg
Hamlin, Kearns & Kennedy 100
Sugar Run, W H D Chapin (old) . . . rig

Quintuple.

25, E Strong & Co No 2 (old) . . . . . rig
44, J W Humphrey (old) . . . . . rig
50, B F Brinton No 3 750
83, Pat Newell 600
196, Boggs & Sterrett 300
225, Vera & Farner 1000
275, Lee Phillips . . . . . rig

New rigs 16
Old rigs 5
Drilling 31
Total 52

Kendall Creek.

Storms, Wright 600
Shedd, P O Buchanan 600
Bingham, Mina Oil Co No 7 600
Bradley, S S Fertig 700
Melvin, P C L & P Co No 81 200
do do No 82 . . . . rig
Chamberlain, Thompson & Lane No 7 [old] . . . . . rig
Borden, Urquhart & Lavens . . . . . rig
Berger, P T & W C Kennedy No 5 . . rig
Borden, (Tram Hollow) No Name Oil Co 900
Rixford, Parsons & Day . . . . . rig
do Unknown . . . . . rig
Norton, Dan Clark [old] . . . . . rig
do F W Mitchell . . . . . drilling
Duke, Charles Duke . . . . . drilling

New rigs 5
Old rigs 2
Drilling 8
Total 15

Foster Brook.

E T Co, Boyne, Penny & Coleman No 5 600
do do do No 6 rig
do do do No 7 rig
do H L Blackmarr & Jones No 15 . 600
do do do No 16 . 100
do do do No 17 . rig
do F L Blackmarr & Post 1700
do do do 500
do do do . . . . . rig
do A E Jones No 3 . . . . . rig
do do do No 4 . . . . . rig bldg
do Enterprise Transit Co No 80 . . rig
do do do do No 81 . . rig
do do do do No 82 . . rig bldg
Borden, R W Evans No 3 . . . . . rig bldg
Borden, R W Argue No 10 . . . . . rig
Willets, I Willets No 27 100
do O Smith . . . . . sand
C B & H, Miller & Odell No 5 1700
do Charles Wilder . . . . . rig
do F A Smith No 5 . . . . . rig
do do do No 6 . . . . . rig
do Coldren & Wolf No 13 . . . 100
do do do No 14 . . . . rig
do Smedley Brothers . . . . . rig
do Roy & Archer . . . . . rig bldg
do George Corson 600

Rigs up and building 17
Well drilling 10
Total 27

Four Mile.

Van Campen Wm M Brown . . . . . drilling
do do . . . . . drilling
do do . . . . . rig
do do . . . . . rig
do do . . . . . rig bldg
do do . . . . . rig bldg
do Geo Van Campen & Sons No 18 500
do Geo Van Campen & Sons No 19 [old] . . . . . rig
do Geo Van Campen & Sons No 20 . . . . . rig
do Nelson & Jones No 4 . . rig
do Wm Doe 200
do do . . . . . rig
do G L Watson & Co No 1 300
do Booth, Bovaird & Seyfang 600
do Adams, Carson & Co . . 1200
do do do do . . 360
do do do do . 2 rigs bldg
do Tarbell & Co . . . . . drilling
do do do . . . . . rig
Zaph, Franchot Bros No 5 . . . . . sand
do do No 6 . . . . . rig
do do No 7 . . . . . rig
do do No 8 . . . . . rig
do do No 9 . . . . . rig
Waters, Griffin & Howard No 2 [old] . rig
Widow Carrol, C J Hickey 600
do Thomas Kervin No 5 . . 600
do do No6[old] rig
do do . . . . . rig bldg
Moultrous, John Coast No 8 100
do do do No 9 . . . . . rig
Stevens, William Stevens No 3 . . . . drilling
do William Burns & Co 1000
do William Chambers No 3 . . . 800
do do No 4 . . . rig
Sparger, Chamberlain No 7 700
do do No 8 . . . . . rig
Stevens, C B Whitehead 1100
Nessell, Burns & Co 700
Stewart, E M Johnson 300
Karl, J Karl . . . . . rig

New rigs 19
Old rigs 3
Drilling 20
Total 42

Indian Creek.

Pine Lot, R G Bailey No 9 [old] . rig
do do No 10 [old] . . . rig
do do No 12 100
Shattuck, Emery Oil Co No 8 600
Loup, Hazlewood Oil Co No 46 1100
do do do No 47 [old] . rig
do do do No 48 . . . . rig bldg
do do do No 49 . . . . rig bldg
Barse, U O Co (G V Foreman agent) No 33 100
do do (G V Foreman, agent) rig
do do Bussell & Co 300
North Branch, J D Downing & Co [old] rig
do do do [old] rig
Keating, Forest Oil Co No 45 . . . . . rig
Elling, do do No 4 . . . . . rig
Hamlin, Miller & Odell . . . . . rig
Curtis W L, Riley Allen 1000
Curtis J J, Morse & Brown . . . . . sand
Dodge, Shear Bros No 7 [old] . . . . rig
Sparger, Bradford Oil Co No 4 . . . . sand
do do do No 5 600
do do do No 3 . . . rig
do do do No 2 . . . . rig bldg
M Campbell, Watson & Rogerson No 5 rig bldg
Zimmer, Shear Bros No 1 500
do do No 2 [old] . . rig
do do No 3 [old] . . . rig
do C Y White & McKinney No 4 . . 200
Dean purchase, Bradley, Curtis & Dean drilling
Hill, Bovee & Duck No 4 200
Weston, Ramsey No 5 . . . . . rig bldg
Campbell, Waugh & Bligh [old] . . . rig
Keating, J L McKinney & Co No 30 . 1100
do do do do No 31 . rig
do do do do No 32 . rig
Barse, Moulton . . . . . rig bldg
Morse, Treat & Mallory . . . . . rig
do J R Morse . . . . . drilling

New rigs 14
Old rigs 9
Drilling 15
Total 38

Cole Creek.

Rew, Capt E Frawley (old) . . . . . rig
Bordell, Kelly . . . . . drilling
Bingham, Forest Oil Co No 34 1300
do do do No 35 . . . . rig bldg
do lot 418, Forman and U O C No 24 . . . . . rig
do lot 495, Forman and U O C No 1 . . . . . sand
do lot 494, Forman and U O C No 11 . . . . . rig
Forman, Union Oil Co No 29 . . . . rig
Simpson, do do No 23 500
do do do No 24 . . . . . drilling
do do do No 25 . . . . . rig
Bingham, 587, John McKeown . No 12 rig

New rigs 6
Old rigs 1
Drilling 5
Total 12

Kinzua.

Bingham, Union Oil Co No 44 . . . . . sand
do do No 50 600
do do No 51 1000
do do No 52 . . . . . rig bldg
Bingham, 135, P T & W C Kennedy No 1 100
do 135, J M Tait No 11 100
do H P Malone No 23 100
Hoop, J M Tait . . . . . sand
Hagadorn, Hackett & Tait . . . . . rig bldg
Lot 5 J J Carter No 14 . . . . . rig

Kinzua Village.

Campbell, Porter & Conley [old] . . . . rig

New rigs 3
Old rigs 1
Drilling 7
Total 11

Warren and Forest.

Glade and Other Towns.

Tract.	Operator.	Depth.
Wardwell,	Benedict & Robinson No 6 [old]	rig
do	do do No 7	200
do	do do No 8	rig
Mowris,	King & Magee No 5	1000
do	do do No 6	600
do	do do No 7	rig
Cobham,	Union Oil Co No 7	400
do	do do No 8 [old] . .	rig
do	do do No 9	rig
do	do do No 10.	rig
R R lands,	Hamilton & Co No 2 (old) .	rig
Meashon,	Anchor Oil Co o 5	500
do	do do No 6	300
McNally,	Steelsmith	350
Stewart,	Wesley Chambers No 1 . . .	sand
do	do do No 2 [old]	rig
Foster,	do do	rig
J Roy,	Calhoun & Co	sand
P Bradford,	P M Smith & Anchor Oil Co	rig
Shirley,	J R Johnson & Co	300
Irvine,	Anchor Oil Co No 3	rig
do	Brown Bros	rig
O H & S,	Wesley Chambers No 3 . . .	100
Sweating,	Magee & Smith	500
J Magee,	Jos Magee, [old]	rig
Branch,	S C Rhodes	sand
Schofield,	A H Daniels No 7 [old] . .	rig
McWilliams,	C A Campbell [old] . . .	rig
Asylum,	North Warren, Sanford & Jameson . . .	rig
Owens,	do do Phil Becker & Co . .	100
Lesler,	Lesler & Son	rig

New rigs 10
Old rigs 7
Drilling 14
Total 31

Clarendon.

Lot.	Operator.	Depth.
36.	Borchart & Smith No 4	rig bldg
53,	Union Oil Co No 16	rig
54,	D Beatty (old)	rig
55,	D Beatty & Son No 32	100
55,	do do No 33	rig
464,	Columbia Oil Co No 9	300
464,	do do No 10 [old] . . .	rig
497,	W Benedict No 12 [old]	rig
465,	J Smith & Son No 2	rig
467,	Wm Pagett No 1	600
79,	Union Oil Co No 8 (old)	rig
79,	Thayer & Crosby No 4 [old] . . .	rig
79,	Beecher & Copeland	rig
105,	F W Pratt No 1 [old]	rig
106,	C C Duffield & Co No 4	100
105,	R I Shugart No 7	150
106,	do do No 3 [old]	rig
105,	Steelsmith, Ross & Co	200
106,	do & Taggart	rig bldg
107,	Fay & Lawton No 12	250
107,	Johnson & Winthrop	250
108,	Hackett & Shirley No 1	250
108,	do do No 2	rig
108,	do do No 3	rig
108,	do do No 4	rig bldg
497,	Mooney & Griffin No 3	800
497,	F W Pratt & Co	100
497,	C C Duffield & Co	400
527,	S C Rhodes No 6	sand
527,	Rockwell & Co No 11 [old]	rig
562,	do do No 5.	sand
494,	Kemp & Solliday	rig
494,	do do	rig
497,	Murphy & Adams No 1	rig
529,	Beecher & Copeland	300
530,	Whitehill & Porter No 4 [old] . .	rig
531,	C A & D Cornen No 1	100
556,	do do No 7	200
556,	do do No 8	rig
611,	[Cherry Grove] Forest Oil Co No 17	100
675,	do Waid & Dunham .	drilling

New rigs 13
Old rigs 9
Drilling 19
Total 41

Tiona.

Lot. Operator.	Depth.
103, Fertig & Henne No 7	sand
109, J S Patterson No 5	rig
109, Short, Oyster & Short No 1 [old]	rig
110, Fertig & Henne No 7	600
110, do do No 8	1000
110, do do No 9	rig
110, do do No 10	rig bldg
164, Helm & Mealey, [old]	rig
165, Wm Pagett No 12	sand
165. do No 13	rig
161, A & S Short No 2	1000
160, J S Patterson No 14	800
160, do do No 15	600
160, do do No 16	200
160, do do No 17	100
165, C H Coffin & Co No 2 [old]	rig
165, Hill & Powell	sand
165, do	rig bldg
200, Wesley Chambers No 1	800
200, do No 4 [old]	rig
204, Dr Dunn & Co [shut down]	500
205, Halleck & Pratt	800

New rigs 5
Old rigs 4
Drilling 13
Total 22

Cooper District.

Tract. Operator.	Depth.
Henry lands, McCalmont Oil Co No 19	1700
do Syndicate Oil Co No 15	600
do do do No 16	1800
do do do No 17	rig
do do do No 18	rig
2735, Reno Oil Co No 5	200
2735, do do No 6	rig
3198, Clark, Foster & Murphy No 5	1100
3198, Clark, Foster & Murphy No 6	rig
Fox lands, Horton, Crary & Co	drilling
Henry lands, Anchor No 34	650
do H B Porter No 7	1000
do do do No 9	100
Cooper, M W S & Co No 31	1000
do do No 32	300
do do	2 rigs
do do	rig bldg
368, Horton, Crary & Co	600
Lot 438, Shank & Emery No 10	1400
do do do No 11	sand
do do do No 13	rig
do do do No 14	rig
West Porter [Henry lands], McCalmont Oil Co No 3	rig
do do McCalmont Oil Co No 4	1100
do do McCalmont Oil Co No 14	100
do do McCalmont Oil Co No 15	rig bldg
439, McCalmont Oil Co No 5	300
439, do do No 8	1500
439, do do No 9	800
439, do do No 10	500
439, do do No 11	1200
439, do do No 13	rig
Williamson, J L McKinney & Co No 7 near s'd	
do do do do No 8	rig
407, Cochran Bros No 1	1400
407, do co No 2	300
Clapp pur, J M Clapp No 3	600

New rigs 13
Drilling 25
Total 38

Balltown.

Lot. Operator.	Depth.
5236, May, Kelley & Grandin No 21	1000
5236, do do No 22	rig bldg
5236, James Welch No 5	drilling
3194, Porcupine Oil Co No 18 (old)	rig
4821, Balltown Oil Co No 8	drilling
4821, do do No 19	rig bldg

New rigs 2
Old rigs 1
Drilling 3
Total 6

Miscellaneous.

Warrant 5134, Forest Co P M Shannon & Co [shut down]	1700
Scott Run, Irvineton Campbell [old]	rig
Pleasant Township, Benedict & Curtis [old]	rig
Warrant 5104, Forest Co. Syndicate No 1 (shut down)	600
Warrant 5104, Forest Co Syndicate No 2 [shut down]	1400
Lot 152, McKean, G H Dimmick	1500
Lot 49 [near Marionville], Arter & Co	rig
Warren Co [Watson township], lot 5246 Curtis & Co	550
Scott, Campbell & Co	300

New rigs 1
Old rigs 2
Drilling 6
Total 9

Lower Country.

Venango.

Farm. Operator.	Depth.
Scrubgrass, Unknown	rig bldg
Sutton, Anderson Bros	drilling
Cook, W Chambers	600
Flinchbaugh, W Chambers	drilling
do Cratty	700
do Dale Bros No 16	800
do do No 20	rig
Rembold, Dale & Smullin No 8	rig
do do do No 9	rig
do do do No 7	300
McCalmont, Richardson & Co	sand
Biery, Richardson & Williams No 1	sand
do do do No 2	sand
do do do No 3	100
do do do No 4	rig
Gormley, do do	rig bldg
Echols, Richardson & Co	300
S Hughes, Shaffer & Co	600
do Dan Baun & Co	700
Tract 47, Fisher Bros	800
Wolfe & K, Wolfe & Kugler No 3	rig bldg
W A Hughes, Hughes & Co	rig
Hughes, Fisher & McLaughlin	500
Echols, P H Judd & Co	rig
Kaufman, P H Judd & Co	100
do A P Dale	100
Epley, Lee & Swan	500
Rockland, Dale Bros	rig
Mouth of Big Sandy, Galbraith & Co	900
Foster, Fisher Bros	rig
Piaget, do do	300
McCalmont, McCalmont	sand

Vicinity Emlenton.

Truby, J O Truby	sand
King, King Bros & Hesler	700
Schmuck, A Schmuck (old)	rig
Comstock & Rowland, Goodrich & Hannifan	rig
Russell, W F Baum	rig bldg
Middleton, Potorff Bros	rig bldg
do Wm Foster	rig bldg
Scott, Barnard & Scott [old]	rig
Leslie, Stevens	800
Smith, C Weible [old]	rig
L Sloan, Unknown [old]	rig
Gosser, Crawford & Son	sand
Haggerty, E Goodrich	200
Nelson, J J Nelson	950
Weller, J Weller (fishing)	500
do do	150
do do (old)	rig
Vacant lot, Klingler, Saulsbury & Horning	100
Weller, R W Porterfield	125
Hunter, Weaver & Co [old]	rig
Weller, E Goodrich	150
Flynn & M, T J Flynn	rig

New Rigs 17
Old Rigs 6
Wells drilling 31
Total 54

Clarion.

Delo, G P Delo (old)	rig
Johnson, J Johnson [old]	rig
Sweitzer, J C Bartlett & Co	drilling
Graham, W Berlin [old]	rig

New Rigs . . . . . –
Old Rigs 3
Wells drilling 1
Total 4

Butler and Armstrong.

Wallace, A Shidemantle	1000
do do	rig bldg
Kaltenbach, Forest Oil Co	sand
Allshouse, Forest Oil Co	sand
McCalmont, Phillips Bros No 5	300
do do do No 6	rig
Haley, do do	500
Saylor, do do	sand
Potter Mill Run, Baldridge, Oil Co	150
Pierce, Jas S Cooper	rig bldg
Black, Black Farm Oil Co	rig bldg
Henderson, Johnson Bros	500
Kamerer, W S Williams	1400
Mulligan, McGuire & Co	sand
Campbell, Denison & Hoyt [old]	rig
Wid McCray, Hunter & Cummings (old)	rig
Turner, W J McKee	rig bldg
East Brady, Unknown	rig
do do	700

New Rigs 6
Old Rigs 2
Wells drilling 11
Total 19

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	JANUARY, 1884. Wells.	Prod'n.	Dry.	FEBRUARY, 1884. Wells.	Prod'n.	Dry.
Scio	4	34	.	5	42	.
Alma	28	260	.	34	308	.
Wirt	4	21	1	3	25	.
Bolivar	13	127	.	18	181	.
Clarksville	3	13	1	6	25	3
Genesee	12	103	.	7	64	.
Miscellaneous	2	.	2	3	.	3
Total	66	558	4	76	645	6

BRADFORD FIELD.

Division of Field.	JANUARY. Wells.	Prod'n.	Dry.	FEBRUARY. Wells.	Prod'n.	Dry.
E. & W. Branches	28	215	.	15	134	.
Kendall Creek	3	19	.	11	72	.
Foster Brook	8	89	.	12	110	.
Four Mile	13	126	.	9	80	.
Indian&Meeks Cr'ks	11	89	.	20	169	
Cole Creek	4	75	.	4	62	.
Kinzua	2	15	.	5	68	1
Total	59	628	.	76	695	1

WARREN AND FOREST.

District	JANUARY. Wells.	Prod'n.	Dry.	FEBRUARY. Wells.	Prod'n.	Dry
Glade	11	126	2	18	131	1
Clarendon	12	65	1	15	87	.
Tiona	7	50	.	15	83	1
Cooper	7	840	.	14	1673	.
Balltown	4	165	1	4	175	.
Miscellaneous	4	.	4	4	.	4
Total	45	1246	8	70	2149	6

LOWER COUNTRY.

District	JANUARY. Wells.	Prod'n.	Dry.	FEBRUARY. Wells.	Prod'n.	Dry.
Venango	25	503	6	27	251	3
Clarion	4	29	.	4	15	1
Butler and Armstrong	7	165	1	6	84	1
Total	36	697	7	37	350	5

GRAND SUMMARY.

District.	JANUARY. Wells.	Prod'n.	Dry.	FEBRUARY. Wells.	Prod'n.	Dry.
Allegany	66	558	4	76	645	6
Bradford	69	628	.	76	695	1
Warren and Forest	45	1246	8	70	2149	6
Lower Field	36	707	7	37	350	5
January Total	216	3139	19	259	3839	18
February Total	259	3839	18			
Difference	43	700	1			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	MARCH 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	1	11	4	16	6	9	5	20
Alma	21	11	32	64	20	12	20	52
Wirt	5	.	2	7	1	.	4	5
Bolivar	14	6	21	41	17	4	22	43
Clarksville	8	2	4	14	4	3	5	12
Genesee	5	25	7	37	4	21	10	35
Miscellaneous	3	.	4	7	3	1	3	7
Total	57	55	74	186	55	50	69	174

BRADFORD FIELD.

Division of Field.	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	MARCH 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	13	7	22	42	16	5	31	52
Kendall Creek	5	3	10	18	5	2	8	15
Foster Brook	7	2	11	20	17	.	10	27
Four Mile	23	4	15	42	19	3	20	42
Indian Creek	17	6	20	43	14	9	15	38
Cole Creek	5	1	2	8	6	1	5	12
Kinzua	1	1	9	11	3	1	7	11
Miscellaneous	.	.	.	.	.	.	.	.
Total	71	24	89	184	80	21	96	197

WARREN AND FOREST.

Division of Field.	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	MARCH 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	14	2	17	33	10	7	14	31
Clarendon	19	4	10	33	13	9	19	41
Tiona	13	2	16	31	5	4	13	22
Cooper	20	2	12	34	13	.	25	38
Balltown	1	1	5	7	2	1	3	6
Miscelllaneous	3	.	6	9	1	2	6	9
Total	70	11	66	147	44	23	80	147

LOWER COUNTRY.

Division of Field.	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	MARCH 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	13	5	23	41	17	6	31	54
Clarion	3	1	5	9	.	3	1	4
Butler & Armstrong	1	3	9	13	6	2	11	19
Total	17	9	37	63	23	11	43	77

GRAND SUMMARY.

Field.	FEB. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	MARCH 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	57	55	74	186	55	50	69	174
Bradford	71	24	89	184	80	21	96	197
Warren & Forest	70	11	66	147	44	23	80	147
Lower Country	17	9	37	63	23	11	43	77
Total Feb. 1.	215	99	266	580	202	105	288	595
Total March 1	202	105	288	595				
Difference	13	6	22	15				

SALE OF THE UNITED PIPE LINES TO THE NATIONAL TRANSIT CO.

In an official circular, dated at Oil City, February 25, and addressed to the oil trade, President J. J. Vandergrift announced the sale of the business and plant of the United Pipe Lines to the National Transit Co. This and a circular from the presiding officers of the two corporations, make plain to the oil trade the conditions and reasons for the transfer.

The circular addressed to the Oil Exchanges reads as follows:

GENERAL OFFICE, UNITED PIPE LINES,
OIL CITY, PA., February 25, 1884.

The business and plant of the United Pipe Lines having been sold to the National Transit Company, the former corporation will cease to receive oil from wells or issue acceptances or certificates on and after April 1st, 1884.

The National Transit Company, through its United Pipe Lines Division, will thereafter issue acceptances and certificates, and receive, transport and store oil within the same geographical limits, and upon precisely similar terms of transportation, and storage, and rules, regulations and methods of business as are now occupied or in use by the United Pipe Lines, and will assume all the liabilities and stocks of the United Pipe Lines as fast as the owners of acceptances, certificates and credit balances transfer them.

No change will be made either in the management of United Pipe Lines or in the location or number of its offices.

The National Transit Company especially confirms the pledge given the trade in 1879: that no change will be made in the present rates of transportation or storage until the market price of oil at the wells shall have reached $1.50 per barrel.

You are respectfully requested to take such action in the matter as you may deem best for the interest of the trade.

J. J. VANDERGRIFT, President.

The circular signed by the presiding officers of the two corporations was issued March 3d:

CIRCULAR TO THE PETROLEUM TRADE.

Gentlemen—In order to give the public all possible information relative to the transfer of the property of the United Pipe Lines to the National Transit Company, we make the following statements:

First—The United Pipe Lines is incorporated under the Pennsylvania act of 29th of April, 1874. Its capital stock is limited to five million dollars and cannot be increased. The authorized capital of the United Pipe Lines is insufficient for the necessities of its business.

Second—The National Transit Company is a Pennsylvania corporation. Its charter confers all the powers vested in the Pennsylvania Company by act of 7th of April, 1870. Its franchises are ample for all the necessities of the pipe line business. Its present paid up capital is thirty-one millions of dollars. Its only indebtedness is a bonded one of $6,278,000. It owns lines of pipe from the oil regions to Philadelphia, Baltimore, Cleveland, Pittsburgh and Buffalo and has two complete lines to New York and a third one partly constructed. It has owned the stock of the United Pipe Lines for the last two years.

Third—The United Pipe Lines has sold its property to the National Transit Company, and after April 1st will remain in existence only to close its business. The stock of oil in its custody will be delivered to the National Transit Company as rapidly as the consent of the owners thereof is obtained. Transfers of property will be made as rendered practical by the transfers of stock. The business of the United Pipe Lines will continue to be conducted by the United Pipe Lines Division of the National Transit Company

and will not be changed in any essential particular. The present officers and agents of the United Pipe Lines will continue to be the officers and agents of the United Pipe Lines Division of the National Transit Company; and the management and direction of the business is continued in their hands. The pledge made by the United Pipe Lines in 1879, in reference to rates of transportation and storage, is ratified and confirmed by the National Transit Company. In order that those consenting to the transfer of oil to the National Transit Company may be secure from heavy general average assessments prior to the delivery of the bulk of the United Pipe Lines' stocks, the National Transit Company hereby agrees that no assessment will be made for loss of oil in its custody, prior to 7 a. m. of April 16th, 1884. By that date the larger portion of the United Pipe Lines' stocks of oil will be in the actual custody and control of the National Transit Company.

Fourth—The United Pipe Lines will require all oil to be removed from its custody within a reasonable time, but until final removal of all stocks it will keep a sufficient amount of tankage in its exclusive custody and control to carry the stocks not removed, and will make monthly reports thereof as heretofore. In order to escape heavy average assessments in case of loss, owners of stocks should give their prompt consent to the transfer of the oil. Necessary information and blank orders for transfer will be furnished at any office of the company.

Fifth—It is believed that greater security is offered to the trade by this transfer; and great care will be taken that the trade shall not suffer any inconvenience on account thereof.

BENJAMIN BREWSTER,
Vice President National Transit Company.
J. J. VANDERGRIFT,
President United Pipe Lines.

MARCH 3D, 1884.

In obedience to the request in the circular of February 25th, President C. L. Wheeler, of the Conference of Oil Exchanges, made the following call:

BRADFORD, Pa., February 29th, 1884.

DEAR SIR—With the advice and consent of several presidents of Conference Exchanges, I hereby call a meeting of the Conference of Oil Exchanges, to be held at Oil City, Pa., March 10th, 1884, at 2 o'clock p. m., to confer with the officers of the National Transit Company and United Pipe Lines, and if found necessary, to recommend such changes in the rules as the sale and transfer of the United Pipe Lines may seem to demand.

Also, to consider and act upon the following preamble and resolution presented by the Philadelphia Petroleum and Mining Exchange:

"WHEREAS, By the by-laws of this Exchange (article 6, section 2), all offers to buy or sell shall be considered to mean United or Tidewater Pipe Line as to kind, if not otherwise mentioned.

Resolved, That in order that transactions in all the Exchanges of the Conference be made uniform as to deliveries, this Exchange request the president of the Conference of Oil Exchanges to call a meeting of the Conference to take action on the question of putting Tidewater Pipe Line Company certificates on the same footing as United Pipe Line certificates as to deliveries on purchases and sales.

Very respectfully, A. DOUGLAS, Secretary."

And the transaction of any other business that may be presented.

C. L. WHEELER, President.
J. M. MCELROY, Secretary.

The Conference of Oil Exchanges met in Oil City, at 4 p. m., March 10th. President C. L. Wheeler presided. In the absence of Secretary J. M. McElroy, Mr. C. T. Leech was elected Secretary pro tem.

The following gentlemen were present, representing the exchanges named:

New York—D. R. Offley, P. B. Crosby, S. F. Strong.

Bradford—H. L. Blackmarr, Joseph Seep, C. L. Wheeler.

Philadelphia—S. Q. Brown.

Titusville—J. J. Carter, M. W. Quick, A. N. Perrin.

Pittsburgh—William Munhall.

Franklin—P. R. Gray.

Oil City—N. F. Hilton, W. J. Young, J. J. Hendricks.

On motion it was resolved to invite the United Pipe Line officials to the meeting of the Conference. J. J. Vandergrift, President; J. R. Campbell, Treasurer; H. D. Hancock, Secretary, and W. T. Scheide, General Manager, came in response to the invitation.

By suggestion of Mr. Wheeler the questions asked and the answers made were reduced to writing.

In the subjoined list the name of the exchange, which the questions represented is appended:

Will the consolidation of the United Pipe Lines with the National Transit Company consolidate the oil now held in both companies, thereby adding any oil now held by the National Transit Company to what has heretofore been considered as oil country stocks? And how much will such addition amount to?—Titusville.

Yes; it will add from one million to fifteen hundred thousand barrels.

Will the transfer mentioned create any change in transportation and storage rates, or in the manner and time of collecting same?—Bradford.

No.

Where are the stocks located by which the increase will be made?

Located along the trunk lines of the National Transit Company, and at New York and Philadelphia.

How much more tankage will there be in the possession of the new line by the transfer?

About twenty-two hundred thousand barrels.

Will the trade be charged 50 cents per day or

41⅔ for odd days on certificates surrendered April 1st, in exchange?—Oil City.

Storage on all acceptances surrendered for exchange during the first ten days of April, 1884, will be charged at 41⅔ cents.

Will the holders of oil be subject to an assessment for any loss of oil while in transit, other than from fire or other unavoidable cause, as at present?—Titusville.

No.

If I present a certificate for exchange dated January 1st, for instance, with storage slip to February 15th, and the exchange is made April 5th, how or in what shape will you designate the accumulated storage in case I should not elect to pay the storage at the time of said transfer?—New York.

In the case named the new acceptance would be stamped "storage due on the acceptance from February 15th, 1884."

To the United Pipe Lines: Do you deliver oil to any point or points where your rate of transportation is different than that mentioned in the present United Pipe Line certificates, viz: twenty cents per barrel?

No.

Is the National Transit Company a common carrier in the same sense as the United Pipe Lines, and does the oil now in their custody belong to them, or is it the property of their patrons? Has the oil now in the custody of the National Transit Company been once accounted as deliveries by the United Pipe Lines?

The National Transit Company, United Pipe Lines Division, will continue to be a common carrier precisely as the United Pipe Lines has heretofore been. The stock now in the custody of the trunk lines belongs to their patrons exactly as the stock of the United Pipe Lines belongs to its patrons. To the second question we answer yes.

Are any tanks situated near refineries so as to be endangered by fire?

Twenty-one of the tanks on the trunk lines are situated near refineries, but not (so we think after a careful examination) endangered thereby.

What change, if any, will the National Transit Company make in the reception of oil from the wells when the United Pipe Lines are transferred to it?

None whatever.

Will there be any change in the contracts for private iron tankage that is now under contract with the United Pipe Lines?—Pittsburgh.

New contracts of the same form and conditions will be made by the National Transit Company.

Will the National Transit Company regard themselves obligated to deliver oil at the seaboard, on presentation of the new form of certificate, by fixing an additional amount for trunk line transportation? If the above is answered in the affirmative, how will the additional amount be determined?—Titusville.

We are not authorized to answer for the National Transit Company's trunk lines, but only for the United Pipe Lines Division.

[It was decided to send this question to the officers of the National Transit Company for answer.]

Is the National Transit Company subject to all the provisions of the present pipe line laws of Pennsylvania and New York?—Titusville and Oil City.

It is subject to the pipe line laws of Pennsylvania, being a Pennsylvania corporation.

What additional powers and responsibilities are conveyed by the franchises of the National Transit Company over the powers and responsibilities of the present United Pipe Lines?—New York.

We refer to the general corporation act of 1874, for the powers of the United Pipe Lines, and subsequent acts governing the business. For the powers of the National Transit Company, see act of April, 1870, incorporating the Pennsylvania Company. It is subject to same regulations in its business as the United Pipe Lines.

Who are the officers and directors of the National Transit Company?—Titusville.

C. A. Griscom, president; B. Brewster, vice-president; D. O'Day, general manager. Do not know the names of the directors.

The Conference thanked the pipe line officials for their attendance, and adjourned until 7:30 p. m.

When the Conference was again called to order, Mr. John J. Carter offered the following resolution which was adopted:

Before closing the report upon the information had and acquired from the officers of the United Pipe Lines and the National Transit Company, it is

Resolved, that a committee of seven gentlemen, one from each of the Exchanges constituting the Conference, be appointed by the chair, who will digest and arrange all the information presented and obtain such additional information as to them seem proper, for the complete knowledge of the subject under consideration, viz: The transfer of the business of the United Pipe Lines to the National Transit Company; and, if the said committee consider it desirable, to report its findings to the full Conference, it may request the president of this Conference to call the members together for the purpose herein named, and the president shall make the call as requested, at the time and place requested by the committee; and that in the event of the committee considering it unnecessary to report to the Conference, it shall report its findings to the president of this Conference, who will cause the said report to be published in full, and properly distributed to the several Exchanges of this Conference.

The following were appointed as the committee: Messrs. Carter, Hilton, Seep, Munhall, Gray, Brown and Strong.

The following memorandum was handed in by the Pipe Lines:

Storage or shrinkage due on United Pipe Lines acceptances or certificates presented for exchange into National Transit Company's obli-

gations, within five months after date of issue will not be collected at the time of such surrender, if the owner so desires, but the new acceptances or certificates issued therefor will be stamped with the date to which storage or shrinkage has been paid.

It was recommended that in case of outstanding contracts, the National Transit Company's certificates through its United Pipe Line Divisions, shall be good delivery of United Pipe Lines oil

Vote taken by exchanges, adopted unanimously.

The following resolution was presented for recommendation to the exchanges:

When the kind of oil is not stated, it shall mean United Pipe Lines, National Transit Company through its United Pipe Lines Divisions, or Tidewater Pipe Company oil.

It was moved to amend by striking out the words, "Tidewater Pipe Company."

It was moved to amend the amendment by striking out the words, "National Transit Company by its United Pipe Lines Division."

The second amendment was lost; and the first amendment, to strike out the words, "Tidewater Pipe Company," was carried by a vote of ten to five. The resolution as amended was then carried by exchanges, by a unanimous vote.

The committee of seven, previously mentioned, held a meeting and appointed a sub-committee consisting of Messrs. Carter, Hilton and Seep, with power to act.

DEMAND ON THE PIPE LINES FOR 1883.

[Correspondence of the AGE.]

As net oil and net stocks only, have been used in the following estimate of the demand on the pipe lines for 1883, a few words of explanation may be necessary, as the "gross stocks" seem to be a mystery, and form a bone of contention for most of the trade.

The net stocks represent the liability of the pipe lines to their customers, and are the sum total of credit balances and outstanding acceptances.

Gross stocks are the total measurements of tanks, including oil, b. s., sediment and water.

"Sediment and surplus" is the difference between gross and net stocks.

Gross stocks may be increased by an increasing temperature or by leaky tank roofs, or decreased by a declining or lower temperature, by leaky tanks, by drawing off water, by breakage of lines and loss of oil, or by cleaning out sediment that goes to waste. This increase or decrease increases or decreases the gross stocks, and "sediment and surplus," but in no way adds to or takes from the credit balances, outstanding acceptances or net stocks.

All oil taken by the pipe lines as shrinkage on private tankage, or purchased by the lines for cancellation, to provide for the shrinkage on oil carried for the trade, at regular rates, reduces the credit balances or outstanding acceptances, and consequently the net stocks, and adds to the surplus and sediment, but in no way changes the gross stocks.

From this it will be seen that the net oil only can be used to base any calculations of the output, as the net oil only is affected by the transactions in *actual* oil, and any estimates made on gross oil are without a base as soon as a cold snap or a hot blast are encountered—while these changes in no way affect the relations between the trade and the Pipe Lines.

The sediment and surplus of the United Pipe Lines on January 1st, 1883, was 5 3-10 per cent. of the gross stocks, of the Tidewater 4 9-10. And from the gauge made the 1st of September, 1883, this would seem to be sufficient for the protection of the trade. This surplus may be changed by the expansion during summer, but to a certain extent will be cancelled by the drawing of water which becomes necessary from time to time.

Below we present the figures of the Pipe Lines for 1883, showing that the shrinkage and outputs were in excess of commonly accepted estimates, and somewhat in excess of the accredited production of all the districts at the beginning of the present year.

Pipe Line Receipts, 1883:

	Barrels.
United	21,075,153
Tidewater	3,146,768
Octave	45,938
Franklin	87,654
Other Lines (est)	27,546
Total Receipts	24,383,059

Pipe Line Deliveries, 1883:

United	18,575,347
Tidewater	3,249,032
Octave	45,685
Franklin	79,605
Other Lines (est)	27,500
Total Deliveries	21,977,169

Net Stocks, close of 1882:

United	31,790,242
Tidewater	2.490,425
Octave	5,776
Franklin	17,452
Shaffer Run	27,442
Charley Run	3,844
Total	34,335,181

Net Stocks, close of 1883:

United	33,286,943
Tidewater	2,359,626
Octave	5,889
Franklin	25,501
Shaffer Run	3,987
Charley Run	28,053
Cranberry	5,565
Total	35,715,564

RECAPITULATION.

Receipts, 1883	24,383,059
Deliveries, 1883	21,977,169
Excess of Receipts	2,405,890
Net Stocks, close of 1883	35,715,564
" " 1882	34,335,181
Increase in Net Stock	1,380,383
Excess of Receipts	2,405,890
Increase of Net Stock	1,380,383
Balance showing Loss by evaporation, waste, etc., and purchases by Pipe Lines on account of same	1,025,507
Deliveries	21,977,169
Loss	1,025,507
Total	23,002,676
Daily Average demand on Pipe Lines, 1883	63,021

The daily average demand as shown is as near as figures at command will admit. The error if any is to reduce the estimate, as it has been almost impossible to arrive at all the deliveries, especially those made by the smaller lines.

The following table made from statements issued monthly by the United Pipe Lines, clearly shows the loss, and purchases on account of the same, for each month of the year 1883.

Month.	Excess of Receipts.	Excess of Deliveries.	Stock Increased.	Stock Decreased.	Loss and Purchases
January	669,604	....	628,410	....	41,194
February	586,103	....	567,779	....	18,324
March	404,571	....	125,581	....	278,990
April	272,746	....	11,715	....	261,031
May	258,079	....	242,744	....	15,335
June	305,261	....	289,871	....	15,390
July	349,419	....	339,423	....	9,996
August	23,281	....	....	291,053	314,334
September	....	279,002	....	288,036	9,034
October	....	150,439	....	163,742	13,303
November	....	100,772	....	112,485	11,713
December	160,954	....	146,494	....	14,460
Total Loss and Purchases to cover same					1,003,104

The estimate made by the Pipe Lines, of loss by evaporation and shrinkage, and charged on oil held in private tankage is 3 per cent. per year. This rate of loss on the average net stocks of the United Pipe Lines for 1883 would amount to 964,158 bbls. and their provisions for this loss is somewhat in excess of that amount. It will also be seen that the reserve of "sediment and surplus" has increased from 3.07 per cent. on gross stocks at the close of 1882 to 5.3 per cent. the gross stocks at the close of 1883.

It is not the purpose of this article to deal in imaginary figures, by making estimates on the increase or decrease of stocks in the field or outside the oil country. No reliable data can be reached, and as nearly every one has his own idea of these unknown quantities, they can attack them at their pleasure.

Net stocks in the February report of the United Pipe Lines has been changed to "Total Liabilities." The explanation of "Net Stocks" preceding the figures given herewith, will sufficiently account for this change.

FEBRUARY PRODUCTION REPORT.

Reports have been received showing the amount of stocks in wooden tanks at 6,666 Bradford wells on the 1st, of March. Sixty-five of these wells had no record for the first of the month preceding; so that a comparison is made between 6,576 wells February 1st, and 6,601, March 1st. The difference in the number, is made by the addition of new wells to the completed list during the month.

The result of these reports is shown in the following:

Time.	No. Wells.	Gross Stocks.	Average per Well.
March 1, 1884	6,601	460,784	69.8
February 1, 1884	6,576	482,712	73.4
Difference	25	21,928	3.6

The number of wells in the Bradford field, connected with the pipe lines on the 1st of March, is estimated at 12,965. The above figures show an average decrease in the stocks at wells of 3.6 barrels. If this average holds good for the entire number of wells in the field, the total stocks decreased 46,656 barrels during the month of February, an average of 1,609 barrels per day. The average daily pipe line runs by both lines in the Bradford field during February were 33,987 barrels. Subtracting the decrease of stocks at wells from the pipe line runs a fair estimate on Bradford's February production would be:

	Barrels.
Average Daily Pipe Line Runs	33,987
Daily Decrease of Stocks at Wells	1,609
Bradford's February production, est	32,378

These figures show a small increase over the estimate for January.

THE BRADFORD FIELD.

	Barrels.
Estimated daily production for February	32,378
do do do January	31,806
do do do December	34,470
do do do November	35,026
do do do October	35,654
do do do September	34,965
do do do August	35,087
do do do July	34,530
do do do June	35,279

THE ALLEGANY FIELD.

Reports of stocks at wells received from the Allegany field are tabulated as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
March 1, 1884	1,115	65,591	58.8
February 1, 1884	1,108	70,477	63.6
Difference	7	4,886	4.8

With 3,384 wells in the Allegany field on February 1st and 3,454 wells on March 1st, the above averages furnish the following results:

Time.	No. Wells.	Average per Well.	Gross Stocks.
March 1, 1884	3,454	58.8	203,095
February 1, 1884	3,384	63.6	215,222
Difference	70	4.8	12,127

At this rate the total stocks in the field decreased 12,127 barrels during the month or 418 barrels per diem. The runs from the lines were 12,025 barrels a day. Subtracting the decrease in stocks makes the daily production of the Allegany field in February 11,607 barrels. These figures denote an increase of 344 barrels a day over the January production.

	Barrels.
Allegany's February production is estimated at	11,607
Allegany's January production is estimated at	11,263
Allegany's December production is estimated at	12,437
Allegany's November production is estimated at	12,678
Allegany's October production is estimated at	13,089
Allegany's September production is estimated at	12,335
Allegany's August production is estimated at	12,264
Allegany's July production is estimated at	12,345

FOREST, WARREN AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Forest and Warren counties. The number of wells on the 1st of each month with their averages are contained in the following statement:

Field.	No. Wells. Feb. 1.	No. Wells. Mar. 1.	Average per Well. Feb. 1.	Average per Well Mar. 1.
Clarendon & Tiona	69	77	76	58
Cherry Grove	50	50	123	123
Cooper District	104	104	244	202
Lower Country	74	74	53	47

The 104 old wells on the Cooper tract show a decrease in stocks of 42 barrels per well. The increase in working stocks in the Henry's Mills section made up for the reduction at the old wells. The few wells heard from in the outside field show a decrease in stocks, but the number reported is too small for an average of the country. Accepting the outside runs as representing the production an estimate on the yield of the region for February would be as follows:

Field.	Barrels.
Bradford	32,378
Allegany	11,607
Outside runs	18,561
Total	62,546

The average daily outside runs for January were 16,140 barrels and for February 18,561, an increase of 2,421 barrels. We cannot show how much, if any, stock oil from wells passed into these runs. The January estimate on production was:

Field.	Barrels,
Bradford	31,806
Allegany	11,263
Outside runs	16,140
Total	59,209

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, JANUARY, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., MAR. 6, 1884.

CUSTOMS DISTRICTS.	MINERAL CRUDE.		NAPHTHAS.		ILLUMINATING.		LUBRICATING AND PARAFFINE OIL.		RESIDUUM.		TOTAL.	
	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.
Boston & Charlestown, Mass.	.....	....	.....	....	370,244	44,527	8,133	2,305	4,200	310	382,577	47,142
New York, N. Y.	5,531,642	467,323	492,252	38,193	20,177,553	1.957,526	1,171,378	215,156	168	17	27,372,993	2,678,215
Philadelphia, Pa.	540,740	40,555	265,100	15,906	4,141,812	405,671	196,519	38,960	.....	....	5,144,171	501,092
Baltimore. Md.	.....	....	.....	....	261,731	25,433	.....	....	157,794	8,400	419,525	33,833
San Francisco, Cal.	.....	....	11,700	2,800	12,620	2,747	.....	....	.....	....	24,320	3,547
All other districts.	.....	....	2,865	356	135,144	18,275	9,084	1,323	.....	....	147,093	19,954
Total for Jan. 1884	6,072,382	507,878	771,917	57,255	25,099,104	2,454,179	1,385,114	257,744	162,162	8,727	33,490.679	3,285,783
Total for Jan. 1883	4,495,830	373,284	1,218,038	91,911	31,488,452	2,881,204	620,801	147,057	214,536	13,089	38,487,657	3,506,545
Total for 7 months, ended Jan. 31, 1884	41,213,228	3 180,907	11,905,735	791,062	256,737,279	23,108,239	6,084,092	1 262,786	3,083,766	196,780	319,024,100	28,539,774
Total for 7 months, ended Jan. 31, 1883	33,780,440	3 522,137	12,057,079	932,969	242,797,048	20,991,486	5,393,727	1 285,486	2,778,972	178,438	296,807,266	25,910,516

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	Feb. 23, 1884. Barrels.	Jan. 19, 1884. Barrels.
London	360,585	398,916
Trieste	69,003	83,096
Seven Continental Ports	1,401,647	1,509,858
Total Stocks afloat and ashore	1,831,235	1,991,870
Decrease in Stocks since Jan. 19		160,635

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS FEBRUARY 23, 1884.

	Stocks Week end'g Feb. 23		Stocks Afloat Week end'g Feb. 23		Unloading Week end'g Feb. 23		Grand Total Stocks Afloat & Unloading.		Receipts. Jan. 1 to Feb. 23.		Shipments Jan. 1 to Feb. 23.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	228,401	316,521	34,997	27,264	20,000	16,800	283,398	360,585	92,559	84,487	107,728	124,966
Trieste	21,312	43,587	14,270	25,416	....	....	35,582	69,003	25,481	65,811	44,038	31,707
Bremen	652,396	763,988	40,256	31,038	92,500	21,500	785,152	816,526	147,456	155.571	251,201	216,835
Hamburg	137,177	56,031	30,494	88,615	19,300	85,800	186,971	230,446	34,479	65,012	96,313	126,547
Antwerp	166,136	122,351	13,873	31,452	53,800	14,500	233,809	168,303	102,842	113,111	123,618	199,035
Rotterdam	41,064	40,967	11,288	12,220	4,500	5,000	56,852	58,187	4,204	31,382	37,889	39,331
Amsterdam	36,772	52,848	18,955	23,558	12.500	14,500	68,227	90,906	14,393	66,093	28,233	38,606
Stettin	16,524	28,780	15,893	4,000	3,000	....	35,417	32,780	3,219	1,032	19,880	32,089
Danzig	18,802	4,449	3,704	....	....	....	22,506	4,499	15,554	2,395	19,683	14,049
Total	1,068,871	1,069,464	134,463	190,883	185,600	141,300	1,388,934	1,401,647	322,147	434,596	576,817	666,492

	1881.	1882.	1883.	1884.
Total stocks exclusive Danzig, London and Trieste	430,845	760,663	1,050,069	1,064,965
Total afloat, exclusive Danzig, London and Trieste	103,950	107,251	130,759	190,883
Total unloading, exclusive Danzig, London and Trieste	121,500	170,500	185,600	141,300
Grand Total exclusive Danzig, London and Trieste	656,295	1,038,414	1,366,428	1,397,148
Total Shipments exclusive Danzig, London and Trieste	54,126	63.573	70,850	84,537
Total Shipments since January 1, exclusive Danzig, London and Trieste	631,501	497,853	557,134	652,443

THE CRUDE MARKET FOR FEBRUARY, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Bradford. Highest.	Bradford. Lowest.	Bradford. Closed.	Oil City. Opened.	Oil City. Highest.	Oil City. Lowest.	Oil City. Closed.	New York. Opened.	New York. Highest.	New York. Lowest.	New York. Closed.	Pittsburgh. Opened.	Pittsburgh. Highest.	Pittsburgh. Lowest.	Pittsburgh. Closed.
F	1	110⅞	110⅞	109½	109⅞	110⅞	110⅞	109½	109¾	110⅞	110⅞	109½	109¾	110¾	110¾	109⅜	109¾
S	2	109¾	110¼	108⅞	109¼	110	110⅛	109	109¼	109⅞	109⅞	109	109¼	109⅞	110	109	109¼
M	4	108¾	109¾	108¾	109⅛	108¾	109¾	108½	109	108⅞	109⅝	108½	109⅛	108¾	109⅝	108½	109
T	5	109	110⅝	109	110½	109	110½	109	110½	109¼	110½	109⅞	110¼	109	110⅜	109	110⅜
W	6	110¼	110⅝	109⅞	110⅛	110⅛	110½	109¾	110⅛	110¼	110½	109⅞	110⅛	110⅛	110⅜	109¾	110
T	7	110¼	110⅝	109⅜	109½	110⅛	110¾	109½	109½	110⅛	110¾	109½	109½	110⅛	110⅝	109½	109½
F	8	109⅝	109¾	108⅞	109⅛	109¾	109¾	109	109	109½	109¾	109	109⅞	109⅝	109¾	109	109
S	9	109¼	109½	109⅛	109¼	109¼	109⅝	109¼	109¼	109⅛	109½	109⅛	109¼	109⅛	109⅜	109⅛	109⅛
M	11	109¼	109⅜	108¾	108⅞	109¼	109¾	108¾	108⅞	109⅜	109⅜	108¾	108¾	109¼	109⅜	108⅞	108⅞
T	12	108⅞	108⅞	107⅝	108¼	108⅞	108⅞	107¾	108¼	108⅝	108⅝	107¾	108¼	108¾	108¾	107¾	108¼
W	13	108⅜	108⅝	105½	105¾	108⅜	108¾	105⅜	105⅞	108⅜	108⅝	105½	105⅞	108⅜	108¾	105½	105⅞
T	14	105¾	105¾	103½	103⅝	106	106	103½	103½	105¾	105⅞	103⅝	103⅝	106	106	103½	102½
F	15	103⅞	103⅞	101¼	103⅜	103½	103½	101¼	103¼	103⅝	103⅝	101⅛	103¼	103½	103½	101¼	103¼
S	16	103⅜	103½	101⅜	101⅝	103½	103½	101½	101¾	103⅜	103⅝	101½	101⅞	103	103¼	101½	101¾
M	18	100½	100⅞	99⅞	100¼	101¼	101¼	99¾	100¼	101½	101½	99¾	100⅜	101½	101½	99⅝	100⅛
T	19	100¼	102½	100¼	102	101	102⅜	100⅞	102⅛	100⅝	102½	100⅝	102⅛	100¾	102⅜	100¾	101⅞
W	20	102¼	102½	100	100	102½	102½	100	100	102⅛	102½	100	100⅛	102¼	102⅜	100	100
T	21	100	100	98⅛	99⅞	100¼	100¼	98⅛	99½	100	100	98¼	99½	99⅞	99⅞	98¼	99⅝
F	22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
S	23	99½	101⅝	98½	100½	99¾	101½	98½	100⅞	99⅜	101½	98½	100⅞	99¾	101⅜	98⅜	100½
M	25	100⅞	101	99	99½	100½	101	99¼	99½	101	101⅛	99¼	99½	100½	101	99¼	99⅜
T	26	99½	100¼	99⅛	99⅝	99¼	100¼	99	99⅝	99¼	100¼	99	99⅝	99⅜	100⅛	99	99⅝
W	27	99½	101⅜	99⅜	100¼	99⅝	101⅜	99⅜	100⅜	99⅝	102½	99⅛	100⅜	99⅝	101¼	99⅜	100¼
T	28	100½	101⅛	100¼	100¾	100½	101⅛	100⅜	100⅞	100⅜	101⅛	100¼	100⅞	100	101	100	100¾
F	29	100⅞	102¼	100¾	102	100¾	102¼	100¾	102	101¼	102⅜	100⅞	102⅛	100¾	102¼	100⅝	102
		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

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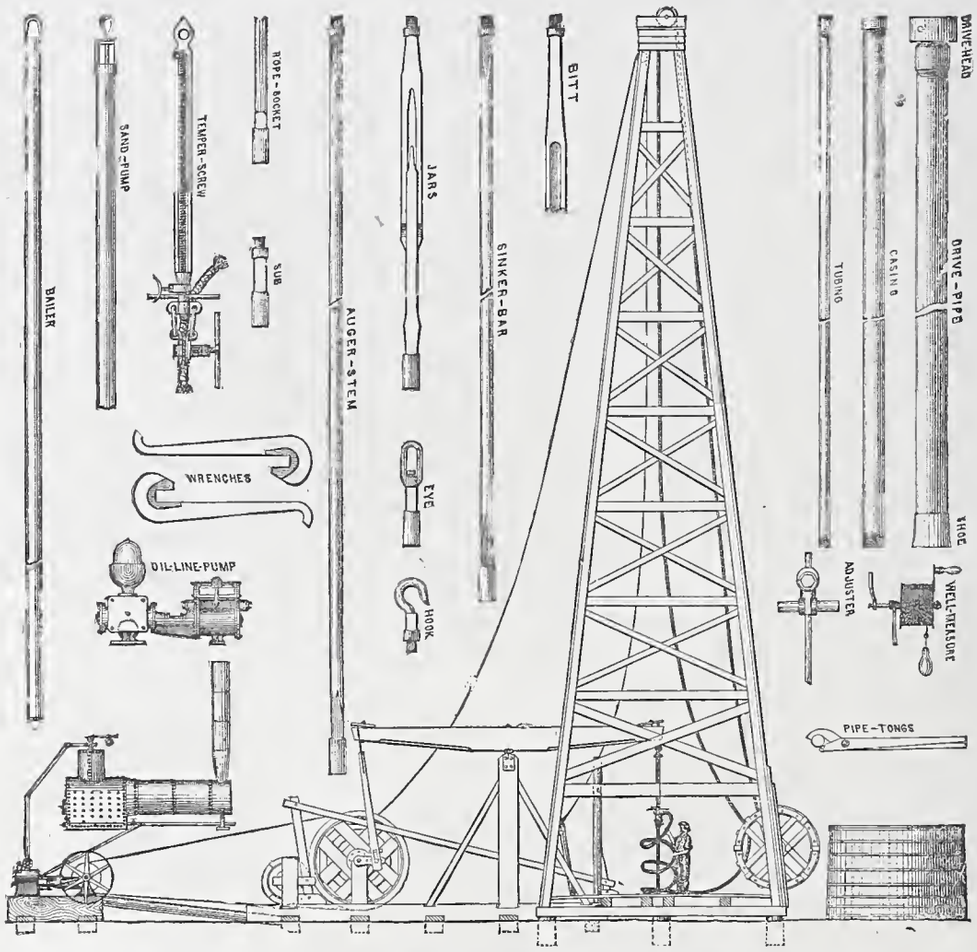

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THE PETROLEUM AGE.

Vol. III. BRADFORD, PA., APRIL, 1884. No. 3.

THE UNITED PIPE LINES AND THE NATIONAL TRANSIT CO.

Few people outside the oil regions have an adequate conception of the labor involved, the capital engaged and the business energy displayed in the storage and transportation of crude petroleum as it is brought forth from its hidden recesses in the earth's crust and delivered over to the manufacturers of the refined product. The owner of an oil well is in direct communication with a freight carrier and a market at all seasons of the year. No sooner has he produced a hundred barrels of oil than, by proper notification, his tank is measured, its contents removed from his sight, and a receipt given him for the amount, which is instantly convertible into cash at the ruling market price.

The United Pipe Lines is the principal corporation engaged in running oil from the wells through pipes to the immense storage reservoirs where it is held until delivered to buyers. As a matter of fact, the process of taking the oil from the tanks of the producers to the tanks of the company, and from thence delivering it to the railroads or the seaboard pipe lines for shipment to the remote refining and exporting points, is a constant one.

Every thousand barrels of oil in the possession of the pipe lines, with the exception of the amount necessarily kept on hand to offset evaporation, waste, etc., is represented by an acceptance or order. These acceptances or certificates are payable on demand in crude oil at any shipping point within the oil regions. They are subject to pipeage charges of twenty cents per barrel, when the oil is delivered to a purchaser, and to storage charges of $6.25 per thousand barrels for every fifteen days the oil remains in the company's tanks. The company is never a holder of oil on its own account, but simply acts in the capacity of a common carrier between the oil producers and the oil refiner. These certificates have acquired a speculative value, and exchanges in various cities are entirely devoted to their purchase and sale.

The pipe line is a natural outgrowth of the petroleum business. It has perfectly solved the problem of oil transportation. The railroad tank car and the shipping rack, though still in use, are now of only secondary importance. The Oil Creek teamster with his jaded horses and load of wooden barrels, dragging the crude petroleum over mountain roads and down muddy hillsides, from the wells to the Allegheny river flat-boat, or to the nearest railroad station, is no longer a familiar object in oil region scenery. His occupation ceased with the advent of the massive steam pump and the huge cistern of boiler iron.

The United Pipe Lines Association, first known as the Fairview Pipe Line, was organized by Capt. J. J. Vandergrift and George V. Forman. It is incorporated under the provisions of the general Act of the Pennsylvania Legislature of the 29th of April, 1874. It commenced business on a comparatively small scale, and at a time when there were numerous lines in existence, all actively engaged in a ruinous competition. The new company endeavored to avoid this suicidal policy and was successful.

Other lines were merged with it from time to time, until it became the rich and powerful organization of the present day. The lines that have been bought and consolidated with the United since 1877, are the Antwerp, Oil City, Clarion, Union, Conduit, Karns, Grant, Pennsylvania, Relief, the Clarion and McKean divisions of the American Transfer Co., the Prentiss lines, the Olean Pipe, the Union Oil Co.'s line at Clarendon and the McCalmont line in Cherry Grove.

The United Pipe Lines cover the oil regions from Allegany to Butler, with a net-work of iron through which the wealth of the country continually pulsates. Its only competitor of import at the present day is the Tidewater Pipe Line a much smaller organization, but a persistent and energetic rival. The United Lines own 3,000 miles of iron pipe, and control a storage capacity of 40,000,000 barrels. With its present force it can remove 10,000 barrels of oil from the producers' tanks in a single day, and place it where it can be taken out of the regions. One hundred and eighteen pumping stations are required to do the work of transferring oil from one part of the field to another. These stations range from the smallest boiler

and engine in a rude hut in some remote section, to the nicely fitted buildings containing from one to five seventy-horse-power boilers, with engines and pumps of commensurate magnitude. The largest of these stations are at Tarport, Duke Centre, Richburg and Kane. Of the entire number, 51 are located in the Bradford and Allegany fields, 32 in the Warren and Forest and 35 in the lower country. The United Pipe Lines employ 87 gaugers in Bradford and Allegany and 32 in the other portions of the field. The chief offices are at Bradford and Oil City, and each station is connected by telegraph with one or the other of the main offices. The employes at the pump stations are required to be telegraph operators as well as engineers. When a gauger measures up the tank of a producer and the oil is passed into the pipe line, the report is wired to the central point of that section of the field. Here accurately prepared tables, representing the measurements of every producer's tank in the region are at hand, properly labelled and numbered. A reference to the right table shows at a glance the amount of oil in barrels that corresponds to the feet and inches run as reported by the gauger, and this amount is immediately credited to the producer on the books of the Pipe Line office. These reports are carefully summed up, and the company knows exactly how much oil has been received, and the total amount under its control at the beginning and close of each day. This system involves a vast amount of bookkeeping and employs a large clerical force of expert accountants and telegraph operators. An ingenious method of checking results has been devised, and so systematic and well regulated is everything connected with the business that any carelessness or dishonesty on the part of employes that may result in waste or loss of oil can be promptly traced to the proper source and corrected.

The business plant of the United Pipe Lines was formally transferred to the National Transit Company on April 1st, but there has been no change in the officers of the company, who still remain as follows:

President, J. J. Vandergrift; Vice-President, D. O'Day; General Manager, W. T. Scheide; Secretary, H. D. Hancock; Treasurer, John R. Campbell; Register, A. Pitcairn; Auditor, G. W. Moltz; In charge of measuring tanks, James Robinson; Telegraph Shipping Agent, E. Ford; Chief Engineer, A. C. Beeson; Superintendent of Tankage, J. B. Maitland; Superintendent of Construction, A. Smedley; Superintendent of Machinery, J. S. Klein; Superintendent of Fuel, W. C. Henry; Superintendent of Telegraph, W. W. Splane; Superintendent Butler and Clarion, C. A. Hite; Superintendent Middle Division, S. M. Rose; Superintendent Upper Division, L. A. Stanford; Superintendent Running Oil and Pumps, Upper Division, W. J. Alexander; Superintendent Running Oil and Pumps, Middle and Lower Divisions, Wm. Miller; Agents—Pittsburgh, Thos. Chester; Oil City, O. P. Swisher; Bradford, E. R. Shepard; New York, G. W. Stahl; Philadelphia, J. B. Young.

THE NATIONAL TRANSIT COMPANY.

The National Transit Company is the organization engaged in the transportation of oil from the regions to the seaboard and the interior refineries. It takes the producers' oil from the tanks of the pipe lines, and delivers it to the New York and Philadelphia exporters and refiners, and the manufacturers of illuminating oil at Pittsburgh, Cleveland and Buffalo.

This company received its charter at the hands of the Pennsylvania legislature. It holds the original charter granted to Andrew Howard, J. S. Swartz and others, under the name of the "Pennsylvania Company," by the Act of April 7th, 1870. Four years ago it absorbed the business and plant of the American Transfer Company, a corporation engaged in the same line of business.

The officers at the present time are, C. A. Griscom, President; Benjamin Brewster, Vice President; John Bushnell, Secretary; Daniel O'Day, General Manager; and James H. Snow, General Superintendent.

The approximate cost of its property was $15,000,000. It owns 15,000,000 barrels of iron tankage and several thousand miles of iron pipes, besides pump stations, machine shops, etc. Its six lines of pipe connect the oil regions with the sea shore and refineries at New York, Philadelphia and Baltimore, and with the interior refineries at Pittsburgh, Cleveland and Buffalo.

The New York division consists of two six-inch pipe lines, from Olean, N. Y., to Bayonne, N. J., and a connecting link across Saddle river to the refineries on Long Island. A third line is already laid half the distance between Olean and Bayonne. This division is nearly 400 miles long and has eleven pumping stations located at the following places: Olean, Wellsville, Cameron's Mills, West Junction, Catatunk, Osborn Hollow, Hancock, Cohecton, Swarthout, New-

foundland and Saddle river. Each station is provided with seven one hundred horse-power boilers and two large Worthington pumping engines. The boilers are in brick houses, each forty feet square and covered with roofs of corrugated iron. The pumps are in separate buildings of the same class as the boiler houses. There are two 35,000-barrel iron tanks at each station, and a telegraph office with all the latest electrical improvements.

The Pennsylvania division is 280 miles long, and has but a single six-inch pipe, which extends from Colegrove, in McKean county, to Philadelphia. There are five pumping stations on this line, viz.: Colegrove, North Point, Pine, Dirnsife and Millway. A branch pipe extends from this line to Milton, Pa., where tank cars are loaded for Philadelphia on the P. & E. R. R.

The Baltimore division consists of seventy miles of five-inch pipe connecting Baltimore with the Philadelphia division at Millway. One pump station is sufficient for this line, and it is located at the last named place.

The Cleveland line begins at Hilliards, in Butler county, and ends at Cleveland. It is of five-inch pipe and one hundred miles in length. There are four stations on this line, Hilliards, Mercer, Warren and Mantua.

The Buffalo division is seventy miles in length and consists of one four-inch pipe, with its initial station at Four Mile, Cattaraugus county, N. Y. There is another station at Ashford and one at the terminus of the line in Buffalo.

The Pittsburgh line is sixty miles long and extends from Carbon Centre, in Butler county to Pittsburgh, with a central station at Freeport.

The National Transit Company, by the acquisition of the United Pipe Lines, becomes one of the most powerful organizations in the country. It is controlled by men who are entirely familiar with all the details of oil transportation and storage. Its capital is amply sufficient for every emergency that may arise, and the enterprising character of its projectors and controllers is clearly shown by the manner in which past difficulties have been encountered and overcome.

The shipments from the Canadian oil fields, of crude distillate, and refined reduced to crude equivalent, amounted to 34, 463 barrels for the month of March. The quantity of oils, kerosene and petroleum, imported into the Dominion of Canada (exclusive of British Columbia) during the month ending 29th February, was 297,-339 gallons.—*Petrolea Topic.*

A MACKSBURG RETROSPECT.

BY VAN WINKLE.

"If you'll look away down the valley you can see the farm; yonder, where it's kind of hazy, you see Duck creek bears hard to the right, and if you look steady you can see a house standin' back in the meadow and the smoke a curlin' up," said the old yeoman, emphasizing his directions with his furrowed finger. We were standing on one of the highest hills which rise from the Duck Creek valley in Ohio. The interesting old farmer was pointing out the land which was once included in the prospectus of one of the old-time oil companies. I refer to the oil excitement of the war days, when a company without a million dollars capital advertised, was considered, contrary to the truth, a dangerous institution. So numerous and gigantic were these companies, that their aggregate capital was appalling in the sum of five hundred millions of dollars, being, it is reasonable to say, the value of all the petroleum yet produced in America. Surface indications and the shallow wells along the historical Duck creek, persuaded money-searching individuals that the greasy wealth was plentiful and should at least be recognized by the oil trade. And thus it was that the dimly outlined lands located by the weather-stained farmer came to appear among the properties of the North American Petroleum Company. So far as the valueless Duck Creek farm goes I am done with it, but the conversation with the venerable farmer prompted me to learn the methods adopted by oil men in the romantic days when they speculated so successfully on paper, and even servant girls invested in stock, to immediately revel in luxury while they slept.

Turning the pages of my atlas, which pictures the scenes, the schemes, the successes, the failures and the unequalled excitement of twenty years ago, I find among the conspicuous large type prospectuses, that of the North American Petroleum Company, capital paid in $1,250,000. Shares 125,000, at $10 each. In treasury, $125,000. Officers—President, Noah L. Wilson; vice president, Wm. F. Roelofson; treasurer, Frederick Shuchardt; secretary, Francis Avery; attorneys, Messrs. Platt, Gerard & Buckley; general superintendent and manager of Ohio and West Virginia properties, Israel R. Waters, Marietta, O.; superintendent of Oil creek properties, Herbert Kittell. Trustees—Noah Wilson, Pres. Marrietta & Cincinnati railroad; Frederick Schuchardt, of Messrs. Schuchardt & Gebhart; J. P.

Girand Foster, of Foster & Thompson; Wm. F. Roelfson, of Wilson, Gibson & Co.; Henry Morgan, of M. Morgan's Son; Wm. Bell, of Abram Bell's Sons; David Gibson, of D. Gibson & Co.; Wm. H. Guion, of Williams & Guion; Thos. C. T. Buckley, of Platt, Gerard & Buckley.

Among these names are those of men prominent in New York, Cincinnati and oil region business circles. That they conducted their business as an oil company with the strictest integrity I know nothing to the contrary. But mark their list of properties, which sinks into insignificance in comparison with the possessions of the big companies of to-day, and certainly is ridiculous as compared with the mighty capital represented. Though they were representative business men, they became infatuated with the oil fever, which it would seem peculiarly affected and expanded the visions of those who were contaminated.

LIST OF PROPERTY
OF
NORTH AMERICAN PETROLEUM COMPANY
IN
OHIO AND WEST VIRGINIA.

146 acres, fee simple, on Duck creek, Ohio.
50 acres, fee simple, on Paw Paw creek, Ohio,
Several wells going down.
1,000 acres, leases, in Ohio. Best selected oil territory,
Several wells going down.
1,300 acres, leases in West Virginia. Best selected oil territory,
Several wells going down.

LIST OF WELLS
OF
NORTH AMERICAN PETROLEUM COMPANY
ON THE
WIDOW McCLINTOCK FARM.

Ocean well . . . . . One-half the oil
Painter well . . . . . One-half the oil
Sterrett well . . . . . One-half the oil
Hammond well . . . . . One-eighth the oil
Lloyd well . . . . . One-eighth the oil

Then there is a red and yellow map, descriptive of $36\frac{77}{100}$ acres, situate on Cherry run, of which ¼ interest in fee is owned by this company. In a small separate diagram, in red, which shows the famous Reed well, "280 bbls. pr. day and ⅝ of all the oil to the N. A. Pet. Co."

Whether this brilliant and inviting prospectus, covering a page quite three times as large as one of the AGE, ever fulfilled the glowing conditions written on its pretty face I do not know. Certain it is, however, a portion of one farm, Widow McClintock, in which the company was interested, created the marvelous Johnny Steele, who made of himself a prospectus which was more insanely visionary than any ever produced in rainbow hues on paper long and wide.

JOHN C. WELSH, who is now studying the oil situation from the seaboard, estimated the home consumption for 1883 at 23,000, and the foreign at 42,000, making the total 65,000 barrels per diem. His estimate for 1882 was 61,000 barrels.

GREASY GOSSIP, WHICH IS ALSO SLIGHTLY GASSY.

The United Pipe Lines completed two new thirty-five thousand-barrel iron tanks at Olean, during March.

The first illuminating oil distilled from coal in this country, was made in 1854, at the works of the New York Kerosene Oil Co., at a place now called Blissville, on Long Island. A kind of cannel coal was used, which came from Dorchester, New Brunswick.

The Cleveland Oil Exchange has decided to disband, and the great oil refining city is once more without an oil exchange.

Dr. Gesner, an Englishman, patented "Kerosene" oil in the United States in 1854. It was made from coal, and paraffine resulted in the manufacturing process. In deciding upon a name for the illuminator, the Greek words *keros* and *elain*, signifying "wax oil," were selected. Camphene was used to some extent at this time for an illuminating fluid, and finally the termination *ene* was fixed upon, and instead of *keroselain*, coal oil came to be known as kerosene.

When business grows slack in the New York Petroleum Exchange, the members keep up the excitement by imitating the example of Boston's cultivated son, Mr. John L. Sullivan. Last month one day shortly after noon, two prominent young brokers, Messrs. Halk and Fredericks, stripped to the buff, and engaged in three rounds, Marquis of Queensbury rules. The contest was a friendly one and Mr. Fredericks was decided the winner.

The Penn Fuel Gas Company have secured a one year's contract to supply the Brilliant Pumping Works at Negley's Run with natural gas for fuel. The contract price is $44,800. The city of Pittsburg thereby makes a saving of $8,000 per year in its water expenses. The Superintendent of Water Works stated that the coal last year for these works cost $45,338, and that the wages of firemen and the extra grate bars made the total expense for fuel nearly $55,000.

Several heavy speculators in the New York Stock Exchange have lately become members of the National Petroleum Exchange. One of them paid his first visit to the oil exchange last Saturday (March 29) and proceeded to show the boys how business was done by the stock brokers. It cost him $25,000. He went long 800,000 barrels at the highest price of the day, and when the market broke, became frightened and sold

out at the bottom, just like an ordinary "sucker."

The agitation between the two New York Exchanges is fast dying out, and each will pursue the even tenor (and basso-profundo) of its way, undisturbed for some time to come, by thoughts of consolidation. An intense rivalry was manifested between the two, and a great deal of bitter feeling developed. Speculators in memberships took advantage of the difference, and made a raid on the seats in the old exchange. The excitement was kept up by malicious misstatement of facts. Stock in the old exchange sold down to $200, and is now quoted at $250. In the National Exchange seats have sold as low as $425 each, and forty-six members of the New York Exchange were admitted to the new by special arrangement, on a basis of about $225 per seat. Stock in the National lately changed hands at $800 per share. No more scalping is to be permitted between the two exchanges, as all means of telephone communication from one to the other are to be discontinued.

The New York Petroleum Exchange is making arrangements to enlarge its present quarters in the Welles building, at No. 18 Broadway. It formerly paid $14,000 per year for the large room it now occupies on the first floor. It will retain the same room, and secure in addition the spacious room directly overhead, at an annual rental of $12,000 for both. The bull ring is to be moved back several feet, in order to give more space in front to visitors. The room on the second floor will be subdivided into a directors' room, a reading and a smoking room.

Eli Perkins is trying his hand at oil reporting. He has visited the budding Ohio field, and discourses about it thus: "Perhaps you won't believe this dispatch. However, I thought you would like to be posted. I assure you I don't own an acre of land here, and am not interested in the market, or indeed anything but the sacred cause of truth, so don't think that I am biased. First of all, Macksburg is undoubtedly a great district; two gushers were opened up to-day. I need not tell you all that a Macksburg gusher is, especially on the third or fourth day after it is drilled in. It is a very grand sight—with a microscope. It would also, perhaps, be useless to give you any lengthy description of how the oil gushes into the tanks and over the tops of the derricks, so I wont—waste time. The Mills & Mullen well is the largest well yet drilled in this field. It struck the sand rather unexpectedly to-day—so unexpectedly, indeed, that no tanks had been erected, and it seemed at one time that much of the immense production would be lost. Fortunately, however, one of the drillers' lunch pails was at hand, and, so far as I can learn, very little oil has been lost. The well is now flowing through three lead pipes."

The nitro-glycerine house of the Repauno Chemical Works at Gibbstown, N. J., on the Delaware river, twelve miles below Philadelphia, exploded March 29, killing six persons and wounding several others. George Norton, the nitro-glycerine maker, was in the house at the time with Lewis Lay, his assistant, making an experiment with the dangerous compound. During the process of refining it he set the nitro-glycerine in the cap on fire, as it was not sufficiently protected by cold water tubes. As soon as the fire broke out Norton ran for assistance, while Lay carried ice and water from a neighboring ice house to cool the chemical. Lamott Dupont, vice- president of the company; William Hill, superintendent, and Harry Norcross, assistant superintendent, at once came to their aid. They entered the building, followed by A. S. Ackerson, an agent of the company at St. Louis, who was about thirty feet behind them. They had hardly passed the threshold of the house when a deafening roar was heard and the building shot up into the air, followed by a pillar of flame. All the other buildings in the vicinity were shaken to their foundations, and every pane of glass in the twenty structures owned by the company was broken. The unfortunate men were instantly killed, with the exception of Lay, who survived twenty minutes, and their bodies were hurled in every direction. The owners of the Repauno Chemical Works are the largest manufacturers of nitro-glycerine and dynamite in the world. Their buildings are scattered over sixty acres and represent an investment of over two millions of dollars. The apparatus that exploded had a capacity of manufacturing 45,000 pounds of nitro-glycerine a day. At the time of the explosion there were between five and seven thousand pounds of this terrible explosive in the tub. The dynamite made from nitro-glycerine at these works is called Atlas powder, and is the same as the powder used in the London railroad stations recently. This is the only place in the world where it is made. The buildings are all of brick, with stone foundations. All are one story in height, except the nitro-glycerine house, which was two stories. The company is composed of the Duponts, Rands and Hazards, all famous powder manufacturers.

OIL FIELDS OF WEST VIRGINIA.

BY F. W. MINSHALL.

As the limits of the productive petroleum fields of Pennsylvania become more clearly marked, the attention of those engaged in production is turned towards West Virginia as a probable field for future operations. So far as actual production is concerned, the limits to the West Virginia fields are more plainly marked than those of Pennsylvania or New York, and the evidence as to the existence of more extensive deposits is of a negative rather than of a positive character.

Various reasons have been given why the yield of petroleum from this State has remained so small in comparison with that of Pennsylvania, the drilling of wells having been prosecuted to a successful issue here as early as 1860, and the collection of petroleum from sand-pits having been carried on as a profitable branch of industry as far back as 1840. At a point on Hughes river, just below the mouth of Flint run, the river banks were let to miners at a certain price per front foot "for the purpose of mining and excavating for petroleum." The pits were dug from six to eight feet deep, and the petroleum which oozed into them was gathered from the surface. In 1845 a well was drilled in this same locality for brine, which yielded about one barrel of petroleum each 24 hours.

About the same time another salt well was drilled on the Rathbone lands near the "burning spring," in Wirt county; this also had a showing of petroleum in it, but as it did not flow out, it was not utilized till 1859. The attention of General S. D. Karns having been drawn to this well, he obtained a lease of the premises and pumped petroleum in paying quantities from the old salt well. Within the next two years wells were drilled on Oil Spring run, in Ritchie county, and on Horseneck, in Pleasants county, with favorable results. In all of these wells the oil was obtained at depths varying from 100 to 250 feet. Thus, it will be seen, at about the same time that production began on Oil creek it was started at four points in West Virginia, viz., Horseneck, Oil Spring run, Hughes river and Burning Spring run. While the Pennsylvania yield has kept steadily increasing, the West Virginia production has dwindled to an insignificant figure. While the Pennsylvania operators have been moving from Venango county to Butler, from Butler to McKean, from McKean to Warren, from Warren to Forest, the West Virginia operator will be found clinging to the same four points at which operations were begun in 1860. The productive field at Horseneck never exceeded one square mile in extent, and was practically exhausted ten years ago; attempts to revive it by deeper drilling within the past year have thus far been unsuccessful. The Rock City Petroleum Company, under the superintendence of Mr. C. D. Garvey, drilled two deep wells in the old territory without finding anything remunerative. A sand rock was found near what would be considered the horizon of the Bradford sand, but it was fine, close and barren.

The productive field at Burning Springs, in its best days was about two miles in length and three-quarters of a mile in width. This field was also practically exhausted ten years ago, no new wells having been drilled within it, and its present production being about 20 barrels per day. The Southwestern Oil Company, of Parkersburg, has drilled two 1,500 feet wells lately, hoping to extend the field to the northward, but has not yet succeeded in developing anything of value. The Hughes River district, in which the original sand-pits were located, never obtained prominence as a productive field. A few shallow wells of small yield were worked for several years, but the deeper wells were all failures. The Globe Oil Company, under the management of Major Jno. A. Steel, drilled some test wells south of the old field, two or three years since, with unfavorable results. A venture of Mr. Pat. Canning, of Pennsylvania, in the same direction, met with the same fate.

From the shallow wells known as the "Ford-Hanlon" wells, drilled in an early day on Oil Spring run, gradually grew up the production of what is called the White Oak district. This field is about five miles long and one and a half miles wide. The principal part of the field is owned by three companies, the Volcanic Oil & Coal Co., about 2,000 acres; the W. Va. Oil & Oil Land Co., 2,000 acres; and the Wood County Petroleum Co., 1,000 acres. About one-half of each of the above tracts may fairly be considered productive territory present and prospective. These tracts are all operated by lessees. The first lease given by the Volcanic Company was dated November 9th, 1864, and the production up to the 1st of January, 1867, was 78,000 barrels of 29° gravity oil. In 1866 this oil sold for $147 per barrel at the well; by August, 1867, the price had fallen to $2.50 per barrel. In 1868 Gen. A. J. Warner induced parties to join him in the purchase and storage of these natural lubricating oils; iron tanks were built and large quantities

of the oil bought and held until a handsome profit was realized. The oils produced upon the Volcanic tract are divided into three classes: light grade, from 34° gravity upward; mongrel grade, from 31° to 33° gravity, inclusive; heavy grade, from 27½° to 31° gravity. Prior to 1868 the oils produced in the White Oak district were principally of the heavy grade; in June of that year oil of 48° gravity was found in a deeper sand by Gen. Warner. In April, 1869, the Barber well, in October the Marberry well, and in September, 1870, the Shaw well found the deep sand at different points. Each of these four wells flowed between one and two hundred barrels per day. This sand is the geological equivalent of the Macksburg, Ohio, deep sand, and the four wells above named are the largest that have ever been found in it, either in West Virginia or Ohio.

It is now over twenty years since operations were commenced in the White Oak district; there are at present about 600 wells in operation, and the average daily yield is about ¾ of a barrel to the well. Much mechanical skill is displayed in the manner of working these small wells, as high as 20 of them being drawn by one engine, the power being transmitted by means of wire rope. It is not at all probable that the aggregate production of this district will ever be increased, as most of the territory has been thoroughly drilled, while both geological inference and the drill have clearly defined its limits. On what, then, are we to base our hopes of a large oil production in West Virginia.

It is now pretty clear that the existence of oil in paying quantities in the counties of Pleasants, Wood, Ritchie and Wirt, in this State, is due to the fact that a narrow anticlinal traverses these counties. Under the crest of this arch the petroleum has accumulated, chiefly in the sandstones of the coal measures and the great conglomerate at their base. In the White Oak district these oil-bearing sands are lifted 1500 feet above their normal level and are thus brought within easy reach of the drill. A well drilled in the bed of Oil Spring run would reach the bottom of the conglomerate at less than 500 feet, while one drilled two miles either to the east or west of that point would not pass through the conglomerate at less than 2,000 feet in depth. Therefore, in any of the four counties above named, very deep drilling would be necessary, outside of the anticlinal, to reach the level of the Pennsylvania oil sands. Now, as a matter of fact, there has never been a well drilled in any of the four counties, outside the line, deep enough to reach the conglomerate. Mr. Garvey's 2200 foot well at Horseneck is deep enough to reach the Bradford sand, provided the interval between it and the base of the coal measures is the same at the two points. A well drilled last year by Messrs. Cuthbert & Carle, on Oil Spring run, to the same depth (2200), penetrates strata at least 300 feet below the bottom of the Garvey wells. From these figures it will be seen that wells of from 2500 to 3500 feet in depth would be required to test this part of the State for the Butler and Bradford sands outside the narrow limits of the anticlinal which runs through it. So far as the river counties of West Va. are concerned, their position in the trough of the Allegheny coal basin practically prevents any extensive test for sand rocks of Devonian age being made outside of the White Oak anticlinal, while inside of that line the territory has already been thoroughly worked and in a great measure exhausted. The counties which lie farther to the east, such as Marion, Harrison, Braxton, Gilmer and Calhoun, are consequently supposed to be those under which the oleaginous treasure lies concealed. The Bradish Oil Company, of Parkersburgh, has several thousand acres leased in Marion and Harrison, upon which it is drilling some test wells; pretty good indications have been found in the coal measure sands, and considerable gas with some show of oil in the equivalent of the Macksburg deep sand, at a depth of 1300 feet.

Several thousand acres have been taken up in Gilmer and Calhoun counties by strong Pennsylvania parties who will drill this Spring, probably on the waters of Steir creek, where there are large surface indications of gas. In this tier of counties the Pittsburg vein of coal runs through the hills, which will serve as a guide to the operator, showing him how much deeper it will be necessary for him to drill for Pennsylvania sands than in Butler or McKean counties. Whether he will find those sands, or, if he succeed in finding them, whether they will be rich or barren, are problems for future solution.—*O. P. & D. Reporter.*

THE proprietors of the AGE have secured the last lot of Opperman's maps of the oil regions, which they offer for sale at reduced rates. See advertisement.

THE office of the PETROLEUM AGE is now in rooms 13 and 14 Producers' Exchange, where our friends are cordially invited to call at any time.

THE REFINED MARKET.

The month of March passed with but few features of interest in refined circles. On the 5th of the month 70° Abel test was reduced from 8⅝c to 8½c, which price was maintained with the exception of now and then a shaving to 8⅜c for the balance of the month. The business was comparatively very light, and the drop in the price of crude causes the foreign buyer to act with great caution in making purchases. Many concessions have been made by the refiners in the way of private sales at 8⅜@8¼c, but they had no perceptible effect on the volume of business transacted.

The demand for refined in cases has been good, and the reduction to 10¼c for plain brands in cargo lots, at the close of the month, caused considerable activity to an otherwise sluggish market.

The East Indies have been heavy buyers, large cargoes having been bought for India and Japan. The stocks abroad show a decrease as compared with the amount on hand in former years. The trading in oil for future deliveries has been unprecedentedly small, and few contracts have been made, even for April delivery. Prices for ocean tonnage have ruled very light and everything seems to denote that an active demand and heavy business must eventually ensue.

In London the closing prices on March 20th, were: April delivery, 5⅞d.; May, 6d.; June, 6@6⅛d.; last four months of the year, 6⅝@6¾d.

	New York.	Philadelphia.	Baltimore.	London and Liverpool.	Bremen.	Antwerp.
	Cts.	Cts.	Cts.	Pence.	Marks.	Francs
S 1	8⅝	8½	8½	6⅜	7 60	19¾
M 3	8⅝	8½	8½	6⅜	7 40	19¾
T 4	8⅝	8½	8½	6⅜	7 60	19½
W 5	8⅝	8½	8½	6⅜	7 60	19½
T 6	8½	8⅜	8⅜	6⅜	7 45	19⅜
F 7	8½	8⅜	8⅜	6⅜	7 45	19⅜
S 8	8½	8⅝	8⅜	6⅜	7 45	19⅜
M 10	8½	8⅜	8⅜	6⅜	7 45	19⅜
T 11	8½	8⅜	8⅜	6¼	7 55	19½
W 12	8½	8⅜	8⅜	6¼	7 55	19⅜
T 13	8½	8⅜	8⅜	6¼	7 55	19⅜
F 14	8½	8⅜	8⅜	6¼	7 55	19⅜
S 15	8½	8⅜	8⅜	6¼	7 55	19⅜
M 17	8½	8⅜	8⅜	6¼	7 50	19
T 18	8½	8⅜	8⅜	6¼	7 50	19
W 19	8½	8⅜	8⅜	6¼	7 50	19
T 20	8½	8⅜	8⅜	6¼	7 50	19
F 21	8¼	8⅜	8⅜	6¼	7 50	19
S 22	8½	8⅜	8⅜	6¼	7 50	19
M 24	8½	8⅜	8⅜	6¼	7 50	19
T 25	8½	8⅜	8⅜	6¼	7 50	19
W 26	8½	8⅜	8⅜	6¼	7 50	19
T 27	8⅜	8⅜	8⅛	6¼	7 45	18⅞
F 28	8⅜	8⅛	8⅛	6¼	7 45	18⅞
S 29	8⅜	8⅛	8⅛	6¼	7 35	18¾
M 31	8½	8⅛	8⅜	6⅛	7 45	18⅝

THE finest and most reliable maps of the various oil fields for sale by McMullen & Snell, at the office of the PETROLEUM AGE, rooms 13 and 14, Producers' Exchange, Bradford, Pa.

CRUDE MARKET FOR MARCH.

The month of March has been one of triumph to the bear element in the petroleum market. Opening at 102 there was a spasmodic strength manifested, which suddenly gave way when the 106⅝ point was reached, the highest mark for the entire month. After this, prices slowly sagged off until on the 6th, when they touched 98¼. There were several sharp reactions above the dollar mark after this, but the downward tendency of the market could not be arrested, and on the 29th sales took place at 92⅞. This proved the lowest point for March, and the month closed with crude certificates at 94¾.

The field news had little to do with the drop in prices. There were many exaggerated reports and bear rumors freely circulated, but no fresh areas of territory have been developed. The Chambers' well at Wardwell excited some attention, and the Macksburg region, in Ohio, has been the occasion of a short-lived interest. There were several heavy failures among the "longs" in New York and Oil City, which slightly intensified the feeling of insecurity that prevailed throughout the month.

The transfer of the United Pipe Lines to the National Transit Company necessitates a new issue of certificates, and the confidence of large holders is not strengthened by the intelligence that the consolidation means an increase in the amount of visible stocks represented by pipe line acceptances.

THE CLEARANCES.

	March. Barrels.	February. Barrels.
Bradford Oil Exchange	169.482,000	176,100,000
Bradford Prod. Pet	56,598,000	57,164,000
Oil City	221,133,000	213,322,000
New York, N. Y. Pet	224,664,000	197,578,000
New York, National	223,702,000	198,698,000
Pittsburg	193,572,000	205,948,000
Total	1,089,151,000	1,048,810,000

Mr. John P. Reinecke, of Pittsburgh, has invented a method for preventing the accumulation of inflammable gases in oil tanks by an induced current of air which is made to enter the tank and which displaces the gases and carries them off. He also has invented a floating cover placed inside of an oil tank, resting on the surface of the oil and formed in sections so arranged that the float will expand or contract as the tank is expanded or contracted by change in temperature, forming at all times a perfect covering over the surface of the oil. The purpose of this cover is to prevent the evaporation of hydro-carbon oil by excluding the air from the surface thereof, and also to protect the oil from fire should the inflammable gases in the upper part of the tank become ignited.

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to April 5, for the years 1883 and 1884, were as follows:

	1884. GALLONS.	1883. GALLONS.
From Boston	1,606,859	1,134,376
Philadelphia	12,320,750	11,346,463
Baltimore	1,202,673	2,300,840
Richmond	....	173,449
Total	15,130,282	14,955,128
From New York	87,473,632	95,196,958
Total exports from United States	102,603,914	110,152,086

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to April 9th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
GREAT BRITAIN.—London	3,637,827	11,140,500
Liverpool	393,623	3,052,128
Bristol	390,780	243,745
Ireland	752,849	1,135,363
Other ports	1,199,543	1,536,835
GERMANY—Bremen	9,551,873	12,675,044
Hamburg	11,343,870	8,072,379
Konigsburg and Stettin	....	326,503
Dantzic	....	....
Other Ports	....	....
FRANCE—Marseilles	....	....
Havre	....	....
Norway and Sweden	301,523	777,374
Russia	....	....
Denmark	1,228,181	1,579,444
Belgium	9,389,762	10,160,206
Holland	7,584,525	3,612,968
Spain	70,000	20,770
Portugal	178,019	685,166
Gibraltar and Malta	1,813,510	280,970
Italy	521,779	741,045
AUSTRIA.—Trieste, etc	1,150,358	2,552,938
Greece	....	....
Turkey in Europe	150,200	....
Turkey in Asia	483,700	147,180
India	6,317,480	2,212,500
China, Japan, etc	5,019,190	7,165,070
East Indies	3,173,150	9,229,560
AFRICA.—Alexandria, etc. E	503,210	292,480
Canary Islands	....	42,145
Other Ports	463,222	1,110,693
Australia	636,393	570,668
New Zealand	220,720	205,520
Sandwich Islands	125,100	27,500
SOUTH AMERICA.—Brazil	853,626	1,374,795
Argentine Confederation	878,970	886,250
Chili and Peru	168,960	522,000
U. S. Columbia	139,015	72,951
Venezuela	145,346	190,479
Other Ports	22,300	63,461
Central America	38,695	50,328
Mexico	408,825	453,789
British North American Colonies	258,134	180,438
Cuba	172,637	48,393
British West Indies and Br. Guiana	427,711	579,919
Other West Indies	359,085	267,471
Total . . . Galls.	70,473,691	84,286,878

CRUDE.

	1884.	1883.
FRANCE.—Havre	3,003,014	2,005,341
Marseilles	1,463,532	578,445
Bordeaux	607,441	816,407
Dunkirk	1,533,314	1,721,387
Other Ports	2,485,811	1,668,836
Antwerp	....	....
Bremen	....	383,452
Norway and Sweden	....	....
Spain	2,323,083	1,883,743
Cuba	886,393	697,216
Other Ports	3,185,915	....
Total . . . Galls.	15,488,593	9,754,827

NAPTHA.

	1884.	1883.
Great Britain	878,042	1,202,477
France	385,606	529,074
Germany	211,090	486,987
Other Europe	25,095	248,444
Various Ports	11,605	27,200
Total . . . Galls.	1,511,438	2,494,182

RESIDUUM.

	1884.	1883.
To all Ports	762,325	1,928,993

	GALLONS.
Total Refined since January 1, actual shipments	72,195,712
do do do do crude equivalent	96,260,949
do Crude do do actual shipments	15,774,803
Grand Total Crude and Crude equivalent . . . . galls.	112,035,752
Same time, 1883	122,137,331

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, April 9th, 1884:

PORTS.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	21	31	9	.	.	61
Philadelphia	9	10	.	.	.	19
Baltimore	2	.	.	.	1	3
Boston	.	.	.	.	.	.
Total April 9	32	41	9	.	1	83
Total March 8	29	23	14	.	.	66
Increase						17

SHIPMENTS AND STOCKS—RUNS.

RUNS OR RECEIPTS.

PIPE LINE.	MARCH, 1884.	FEB. 1884.
United	1,727,813.83	1,651,469.24
Tidewater	300,330.00	273,853.91
Octave Oil Co	3,072.12	2,629.00
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	6,303.01	4,900.95
Cranberry Pipe Line	11,961.78	11,621.54
Total	2,051,480.74	1,944,474.64
Less oil counted twice as runs	49,187.38	71,842.03
	2,002,293.36	1,872,632.61
Daily average	64,590.11	64,573.54

DELIVERIES OR SHIPMENTS.

PIPE LINE.	MARCH, 1884.	FEB. 1884.
United	1,629,921.39	1,456,657.14
Tidewater	233,196.58	249,594.68
Octave Oil Co	2,915.89	1,974.00
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	3,937.73	7,441.10
Cranberry Pipe Line	3,827.51	7,501.50
Total	1,873,799.10	1,723,168.42
Daily average shipments	60,445.13	59,419.60

Daily excess of runs over shipmets, March, 1884	4,144.98
Daily exeess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,995.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

PIPE LINE.	MARCH 31, 1884.	FEB 29, 1884.
United	33,553,053.06	33,463,939.20
Tidewater	2,572,458.84	2,507,236.78
Octave Oil Co	6,208.50	6,333.00
Charley Run	3,986.81	3,986.81
Shaffer Run	28,052.75	28,052.75
Franklin (limited)	18,753.29	16,388.01
Cranberry Pipe Line	24,112.99	15,978.36
Total	36,206,626.24	36,041,914,91

Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	396,004.51

	RECEIPTS.	DELIVERIES.
Daily Average, March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52,737
Daily Average February	65,208	44,352
Daily Average January	65,125	43,813

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PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for March, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of March		2,507,236.70
Quantity of crude petroleum at close of March	2,718,616.50	
Less sediment and surplus	146,157.66	2,572,458.84
Receipts during March		300,330.00
Deliveries during March		233,196.58
Outstanding certificates, accepted orders, etc		2,107,000.00
Credit balances		465,458.84
Total liabilities March 31, 1884		2,572,458.84
FEBRUARY, 1884.		Barrels.
Quantity of crude petroleum in custody at beginning of February		2,485,166.29
Quantity of crude petroleum in custody at close of February	2,636,461.23	
Less sediment and surplus	129,224.45	2,507,236.78
Receipts during February		273,853.91
Deliveries during February		249,594.68
Outstanding certificates, accepted orders, etc		2,018,000,00
Credit Balances		489,236.78
Total liabilities February 29, 1884		2,507,236.78

SUMMARY of United Pipe Line statements for February and March, 1884.

	March, '84. Barrels.	Feb. 1884. Barrels.
Receipts, all sources	1,729,813.83	1,651,469.24
Deliveries	1,629,921.39	1,456,657.14
Gross Stocks, end of month	35,742,378.70	35,478,250.78
Sediment and Surplus	2,189,325.64	2,014,311.58
Total liabilities end of month	33,553,053.06	33,463,939.20
Outstanding Acceptances	27,410,614.25	27,920,564.75
Credit Balances	6,142,438.81	5,543,374.45

Of the above receipts for March, 49,187.38 barrels were received in iron tanks.

Estimated Cost of One Thousand Barrels of Refined Oil.

MARKETS OF APRIL 5TH, 1884.

1,700 barrels (42 galls.) crude oil at 93c	$1,581 00
Pipeage on 1,700 barrels of oil, at 20c	340 00
Transportation from Bradford to New York, including terminal charges, 40c	680 00
1,242 second-hand empty barrels, at $1 16	1,440 72
Paint, glue, cooperage, etc., per bbl. 25c	310 50
Refining 50,000 galls, at 1c per gall	500 00
Approximate cost	$4,852 22

MARKET VALUE OF THE PRODUCTS.

44,625 gals. 70° Abel test refined oil at 8⅜c	$3,737 34
5,375 gals. 150° test at 11½c	618 12
50,000 gals. refined,	$4,355 46
3,570 gals. naphtha, 70°, at 7½c	267 75
2,142 gals. naphtha, 76°, at 9c	192 78
1,428 gals. gasoline, 86°, at 16c	228 48
4,998 gals. tar, at 4¾c	237 40
Gas and coke	. . .
Total value of results	$5,281 87
Total cost	4,852 22
Apparent profit	$ 429 65

In the above calculations per centage of the crude is estimated as follows:

70° Abel test refined	62½	per cent.
150° test refined	7½	"
Naphtha, 70°	5	"
A naphtha, 76°	3	"
Gasoline	2	"
Tar	7	"
Gas, etc., waste	13	"
Total	100	

1,242 barrels refined, 50 gals. to barrel	62,100	gals
1,700 barrels crude, 42 gals. to barrel	71,400	"
Results—Refined	50,000	gals
Naphtha, gasoline, etc.	12,138	"
Total refined products	62,138	"
Amount wasted in refining	9,262	"
Total	71,400	"

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to April 1st, 1884.

1882.	Ch'y Gr've. Bbls.	Cooper. Bbls.	Balltown. Bbls.	Total. Bbls.	Daily Av'ge Bbls.
May	6,765	. . . .	. . . .	6,765	218
June	91,102	. . . .	. . . .	91,102	3,037
July	268,294	. . . .	. . . .	268,294	8,655
August	753,752	. . . .	. . . .	753,752	24,315
September	690,072	. . . .	. . . .	690,072	23,002
October	290,246	3,712	. . . .	293,958	9,483
November	146,587	8,810	. . . .	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
Total April 1, '84	3,183,781	1,467,681	1,034,847	5,686,309	8,112

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown field from the time oil was first run in each district up to April 1st, 1884. Cherry Grove has produced 3,183, 781, the Cooper district 1,467,681 and Balltown 1,034,847 barrels. The average daily runs from the three fields during March were 8,445 barrels, an increase of 919 barrels over February. The March daily average runs for the Henry's Mills section of the Cooper district were 3,128 barrels, and for the remainder of the district 1,503, making the daily average for the entire Cooper field, 4,631 barrels. The average daily pipe line runs of the Balltown district for March were 2,813 barrels; the February average was 2,815 barrels.

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

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THE PRODUCING REGION.

ALLEGANY FIELD.

Two wells in the town of Wirt north of the dry holes and gas wells which form the border line of the old development, disclose the existence of a pool of black oil north of the Allegany field. The Snow well, on the southwestern corner of lot 45, Wirt, and Lester, Jordan & Co.'s well, between lots 52 and 60, are about a mile apart. The Snow well, stimulated by a large shot, started at 32 barrels, and had a production at the close of March of 15 barrels. Lester, Jordan & Co.'s well is quite a heavy gasser, and was doing 10 barrels toward the close of the month. The territory cannot be extended to the eastward from these wells, but there is room to the southwest, in the direction of lot 10, Clarksville, for an extension. The black oil territory of the Allegany field has proved uncertain in its yield and irregular. It remains for the drill to demonstrate the extent and characteristics of the territory which appears in sight through these two strikes. It is almost safe to predict that the yield of crude from the section about these two wells will not influence the production of the Allegany field to any appreciable extent. The want of undrilled territory of a better grade has caused that in the recently developed of lot 106, Alma, to be sought after during the past month. Howard, O'Connor & Shanley's well, on lot 62, Willing, was shut down, it is supposed, in the top of the sand, on the first of April. Interested parties were securing lands in that neighborhood or between this well and the producing wells about lot 106. Up to the present writing nothing has been discovered outside of the defines of the old field which will afford a quick and copious flow of crude. Throughout the field there is a pressing demand for pumping outfits, which shows that many wells will not give up their quota of crude without the use of the sucker rod.

Whitehead & Co.'s well, at Gains, in Tioga county, had reached a depth of 1,000 feet April first.

There was only a slight change in the volume of new work in this field at the close of March compared with the previous month. The summary published elsewhere gives the result of a personal and thorough canvass by representatives of the AGE. The 68 wells completed had a production, on the last day of the month, of 576 barrels. April 1st there were 64 new rigs up or building, 46 rigs which had been standing for 30 days or more, and 74 wells drilling, a total of 184 against 174 for the previous month.

THE BRADFORD FIELD.

It is estimated that the 75,000 acres of territory in the Bradford district will produce 150,000,000 barrels of oil before the field is drained. The amount saved from the wells up to the present writing aggregates 100,000,000 barrels. There are yet 50,000,000 barrels stored away in the deep sand rock which underlies the rugged surface of the field. The effect of shooting and pumping the old wells will be a matter of more concern to oil-men than the drilling of new wells on the ragged edge of the district.

Operations continue quite active in the Tuna valley about State Line, and light territory, condemned as worthless years ago, is now being reclaimed and drilled by operators. In fact, throughout the field the drill is vibrating in out of the way places and on odd pieces which were neglected or reserved during the palmy days. At Windfall, White, Douglas & Co.'s venture proved to be a well of similar calibre to the other Windfall producers. It is rated between five and eight barrels.

The Kearns & Kennedy test, on Thunder brook, in the northwestern corner of warrant 4914, was a very dry hole. A formation which could be recognized as the Bradford sand, was reached at a depth of 2,035 feet. They found about ten feet of fair sand, and the remainder, enough to make a thickness of 38 feet, was of poor quality. No traces of crude could be discerned, and the casing was pulled and the well abandoned when a depth of 2100 feet was reached. The symmetrical pool at the southwest, if it exists, must be found away from the Kearns & Kennedy well. The Thunder Brook Oil Co.'s well, on the southeastern corner of warrant 3412, was fishing at a depth of 1200 feet on the first of the month. During March 87 wells were completed, having a new production on the last day of the month of 774 barrels.

April 1st there were 86 new rigs up or building, 20 old rigs and 94 wells drilling, making a total of 200 against 197 March 1st.

WARREN AND FOREST.

The country lying between the town of Warren and the Wardwell development, three miles due east, is becoming of interest through the many irregularities which it presents as an oil field. A variety of oil-bearing sands are found at different levels, and the outlines of the pools or streaks are as uncertain as the vertical position and texture of the rocks. The wild cat wells drilled northeast of the Wardwell pool were failures. The Calhoun well and P. M. Smith and The Anchor Oil Co.'s wells, on warrant 5,545, and Steelsmith's test on the McNally farm, warrant 5,536, were dry. Johnson & Co.'s test, on the Shirley lot, 60 rods northwest of the Union Oil Co.'s Nos. 3 and 4, proved a heavy gasser. The most important strike of the month was the Wesley Chambers well, on the Stewart lands, a half mile northwest of the Union Oil Co.'s wells, on the King & Magee purchase. The first three days after the well was opened up it averaged 175 barrels per day. The well was not cased tight, and is now troubled with water. The Anchor Oil Co., who are drilling their No. 2 north of it, on the Stewart lands, found fresh water at 500 feet, after having cased at 300 feet. On the 8th inst., the Anchor Oil Co.'s No. 1, northeast of the Chambers well, was spudding, and their No. 2, north of the Chambers well, was down 750 feet. The Union Oil Co.'s No. 14, nearly east of the initial gusher, was drilling at a depth of 350 feet. Chambers was drilling one well and had a third rig up. These five drilling wells, and rigs are in the immediate vicinity of the Chambers well, none of them being more than two locations distant from it. The Chambers well is rated by the owner between 75 and 100 barrels. A number of test wells are under way between the Chambers well and the producing wells on the Warren flats. On the 8th inst. the Union Oil Co.'s No. 8, on their purchase from Reed, was 30 feet in the sand with no showing of oil. The well is between the producing well on the Harmon lands and the Wardwell group of producers. The Union Oil Co.'s No. 7, on the King & Magee purchase, and the Anchor Oil Co.'s No. 7, on the Mower's farm, are both so small that they verge on the land of dusters. Calhoun has started the drill on Cornplanter run, a long distance northeast of the Wardwell pool.

Thus far the oil produced by the Wardwell district has not been commensurate with the importance given the section. For the 24 hours ending April 9th, the 43 wells produced 531 barrels. In the total the Chambers well is rated at 100 barrels. Eighteen of the 43 wells are on the south side of the Allegheny river.

The Becker well, on the Owens farm, north of Warren, gave indications of making a small well when first completed, but it is now tabulated with the failures. Campbell's well, on the McWilliams farm, at Glade run, had struck a fifteen-barrel gait four days after it was torpedoed. Johnson & Co.'s test well, on warrant 3,672, in the western part of Forest county, 1,000 feet northwest of the Hoodoo well, is reliably reported a non-productive venture at this writing, April 12th.

Clarendon and Tiona showed an increase of new operations on the first of the month. Nothing of importance was brought to view during the month of March.

COOPER.

Of the twenty-seven wells completed in the Cooper district during March, two were conspicuous for the unexpected producing powers which they disclosed. The Clapp No. 3, along the northern boundary line of the Clapp lot and southwest of the M. W. S. & Co.'s No. 27, started at 940 barrels and did 1,000 the first twenty-four hours after it was torpedoed. On the first of the month, a few days after the shot was used, it had declined to 300 barrels. This well does not open up anything new, but merely demonstrates the irregularity of the territory and adds one more to the numerous surprises which have been met with during the development of Cooper Hill. A few more test wells will be sunk on the south side of the Tionesta to find the southwestern limit of the belt, or rather to determine how near it approaches the dry holes which have already been established.

At the northeastern end of the Henry's Mills section, Cochran Bros. No. 2, on lot 407, attracted some attention. It is one location west of No. 1, and proved a well of much larger calibre than was anticipated. After being drilled through the sand a fifty-six quart shot caused it to start at 70 barrels. On the 10th instant it was producing about 45 barrels per day. The owners will drill two more wells west of No. 2. Horton, Crary & Co.'s test well along the south side of lot 368, about eighty rods west of the Eagan dry hole, came in dry. At this point it is certain that no western belt exists.

The twenty-seven wells completed during

March were producing 1,187 barrels on the last day of the month. On the first of April there were fourteen rigs up and building and twenty wells drilling. The average daily pipe line runs for March were 4,631 barrels. The February average was 3,743 barrels.

The Shannon well, on the northern part of Warrant 5,134, and on a 45° range with the Cooper tract, was shut down at a depth of 2,128 feet. Thus far it is as dusty a venture as has been drilled on the south side of the Tionesta. A formation supposed to be in the same plane with Balltown rock was encountered at a depth of 1,775 feet. From 1,900 feet to the level where the drill ceased to vibrate a number of sands and shells were discovered. Gas was found at a depth of 890 feet. On lot 49 of Warrant 3,177, in Forest county, J. M. Arter & Co. have a rig standing. The Syndicate No. 1, on Warrant 5,104, was torpedoed during March and is reported to have started at thirty barrels from the Clarion sand. Nothing of importance is expected from this well and the contiguous territory. Their No. 2, 1,000 feet distant from No. 1, was dry in all sands.

BALLTOWN.

May, Kelly & Grandin, who have traced the Balltown belt a mile and a half southwest of No. 3, the initial gusher of the section, found their second failure in No. 22, which does not promise to make a profitable producer. It is thirty-eight rods east of No. 21, which would place it sixty-nine rods east of the central line of the belt passing through Nos. 19 and 15 and the gushers further northeast. The well was drilled into the sand on the 3d inst., and up to noon on the 7th had produced but 48 barrels. It has been torpedoed three times without any improvement, and at best can only make a light producer. The wells drilled on the south side of Tionesta creek have demonstrated the existence of profitable territory, but below No. 18 no traces of the jugular vein of crude have appeared.

The Balltown Oil Co.'s No. 19, on lot 4,821, completed early in April, afforded an excellent quality of sand, relieved of its laden of crude by drainage. It started at 30 barrels per hour, reached a low ebb in its yield, and after a shot was producing about 110 barrels per day on the 10th of April. The Balltown Oil Co. are drilling Nos. 20 and 21 and have rigs up for Nos. 16 and 22. They will build three rigs east of No. 18. The Howe Oil Co. are drilling No. 12, located thirty-seven rods west of No. 4, along the southern boundary line of lot 4,792. They have nine more locations on their lot, but have not decided how many of them will be drilled.

On the 5th of the month the district contained seventy-eight producing wells, distributed as follows:

Warrant	3,195, Gartlan	2	Wells,
"	3,194, Porcupine Oil Co	16	"
"	4,821, and 4,823, Dutch Oil Co	4	"
"	4,792, Howe Oil Co	13	"
"	4,821, Balltown Oil Co	15	"
"	3,133, Murphy & Gailey	4	"
"	5,236, James Welsh	5	"
"	5,236, May, Kelly & Grandin	19	"
	Total	78	"

The average daily pipe line runs of the field during March were 2,813 barrels.

LOWER COUNTRY.

The lower county presents no startling features at this writing, April 1st, but several interesting wells are under way. Phillips Bros.' wildcat, on the Haley farm, a mile and a half east of the "Wallace pool," Baldridge district, is due shortly. Its bearing as an important test of territory was fully discussed in a previous issue of the AGE. Reed has leased several hundred acres of territory between Baldridge and Butler, and is preparing for an active campaign, having already selected locations for three wildcat wells, in pursuance of the theory that a series of pools, such as the Wallace pool, will be found between these latter and the old Butler third sand belt. This theory is accepted by a large number of operators as the correct one, and vigorous plying of the drill during the summer months will demonstrate its truth or falsity.

At St. Joe, the completion of a good well in the fourth sand streak last month has led to the building of several rigs.

The original fourth sand producer in this section, owned by Dennison & Hoyt, was drilled about five months ago. The owners were looking for either oil or gas in the third sand, but finding neither in paying quantities, gave up the search for crude and sent the drill home for the fourth sand, in the hope of getting gas only. They were agreeably surprised by a producing well of twenty-barrel calibre, which has since improved to thirty-five barrels. Forty-two feet of sand was found in this well, the first twenty-five feet being close, hard, and of dark color, which was non-productive. At the bottom of this was a hard shell, and as soon as the drill broke this there was a flow of gas and oil. Then followed fifteen feet of coarse, white pebble sand, said to be equal to that of the old cross belt at Karns City, and operators in the new district fondly expect to discover a "Big Ghost," a "Boss," or a "Lady Hunter," somewhere in the vicinity. Phillips Bros.' well, on the Sailer farm,

a little more than a mile west and slightly to the south from the Dennison & Hoyt, is pumping at about a two barrel rate from the fourth sand.

At Emlenton, an old second sand well was drilled to the third last month, and developed into a twenty-five barrel producer at the start. It is still holding up to a fifteen-barrel gait, and several wells have been located on the bluff west of town, in the expectation of striking the same lead. The owners are especially sanguine since the completion of a good well on the east side of the river, which lines up well with the Russell farm well first mentioned. The Cranberry district has got a black eye in the large number of dry holes completed last month, and operations are principally carried on in the second or "gray" sand sections of the field. As a whole, the lower country does not promise to be very active, with crude values lagging below the dollar mark.

THE MACKSBURG FIELD.

The oil scouts, who have made a painstaking investigation of the Macksburg field, agree that something better must be found before it can exert a depressing influence on values below the dollar mark. There are possibilities of finding a better sand, more richly laden with crude, beyond the present defines of the field, and until these possibilities are realized the Macksburg section is an unimportant factor in the crude problem. So long as a mud vein or cave rock is encountered at 250 feet on the Duck creek flats, and a salt water sand at 900, there does not seem to be any way of shortening the time of sinking a well. It is slow work drilling through a sand rock having a thickness of 200 feet with over 900 feet of salt water standing in the well and running over the casing. If this salt water sand, which seems to underly the whole county, should be found barren of the saline liquid, and the mud vein local in its geographical range, then a well could be drilled as quickly in Macksburg as elsewhere. Under existing circumstances it takes about two months to complete one.

The production has not been increased to an appreciable extent since the field began to assume importance in the summer of 1883. The 22 wells which have been drilled to the 1500 feet or deep sand, are producing between 110 and 125 barrels daily. A circle having a radius of three-quarters of a mile in length will circumscribe the area upon which all the producing wells are located.

The Garvey well, situated about a mile northeast of the town of Macksburg, was producing 12 barrels on the 9th inst. It is the most northeasterly of the wells which have been thrown open to the public. The Laing well, on the coal lands, is about a mile east, and the Mills & Mullin venture, a mile and a quarter northeast of the Garvey. Wild statements are made concering these last two wells, over which the veil of mystery is drawn, but it remains to be demonstrated that they will make average Macksburg wells. Over the Mills & Mullin well a new rig is being built. In time it is likely to be used still further to disturb the drift of the crude fractions. Denman & Co. are drilling a well one mile northwest of the Mills & Mullin, and about two and a half miles northeast of the Macksburg development. The Union Oil Co. have leased or secured control of a large amount of land about and in advance of the old wells. A number of Bradford operators are becoming interested in the outlying lands of this section.

The Marietta Register, one of the home papers, takes the following rosy view of the field:

The excitement still grows over the Macksburg field. Operators from Pennsylvania continue to come, and from appearances have come to "stay." Sites for stores and hotels are in demand, and if the owners of property are wise, it would be well not to put their figures too high, as such a course will have a tendency to discourage investments. The line of operations is extending away from Macksburg, toward Middleburg, and Elba also has equal facilities, if not better, for the growth of a "live" oil town. The interest the past week has been centered on the Garvey well on the F. T. Perkins farm. Rumor has had it that it would show for the best well in the field opened thus far, and rumor has been right. After some delay and a few accidents, the well was shot on Thursday, March 12th. It was the only well in this field ever shot with the casing filled with fluid. Results have proven that with a small body of oil or water for "tamping," wells have not panned out as prolific as those that have been shot "wet." Mr. Garvey determined to try the experiment of filling the casing with oil and water before shooting. The force of the shot burst three joints and collapsed one. The casing was all drawn and new joints inserted successfully, the well tubed, and it started off at a 50-barrel gait. It is the best well struck, and proves conclusively that all the oil is not confined to the flats on Duck creek. The Coal Lands well, Laing & Co., on Long run, was started up a week ago. Much

interest is felt in its progress, as by its proving a producer it widens the belt at least one mile from the Garvey well on the east. The Denman well, on the Patton farm, has been delayed by want of casing but is now in full blast and will be brought in in about four weeks. This well is no doubt going to be a good one. It is on a due 45° line from the Garvey, and to all appearances the sand thickens northeast. It will be drilled a mystery, and the owner is certainly justified in keeping the knowledge of his business to himself. The Mills & Mullin well, on Long run, that has so long mystified the scouts, is to be opened up. The derrick is being rebuilt and the drilling out of the "plugs" will soon commence. There is now no doubt that the well will be a good one. McManus is rushing things on the Dutton farm east of Keeler No. 1. It will no doubt be a good well. The Clark & Whitney well is still showing for a good average one. They are starting a rig "out to the front," which will be another test to the northeast. The weather has been against operators. Mud—red, yellow and blue—sticky as glue, has prevented teaming, consequently work cannot be pushed. With the advent of dry weather and a little sunshine, we look forward to a bustling time. The old time craze of '64 will not repeat itself, but business men will enter into the opening of this field with energy and matured knowledge gained by years of experience in the upper country, which we hope soon to rival.

A German newspaper publishes the following letter, dated St. Petersburg, March 10th: "The petroleum trade of the Caucasus is in an embarrassed position, for while the great Russian company (Nobel Brothers) already command a large trade, both inland and export, it has not yet found buyers for the whole of its stock (15,000,000 roubles) nor for all its bonds (3,000,000 roubles). Another company incorporated under the title of Batumer Naphtha Production, which ships mostly to Austria, is also embarrassed for want of necessary working capital. Yet these two companies so monopolize the petroleum trade, that the smaller producers are obliged either to sell their oil at unremunerative prices to the monopolists, or let millions of gallons run to waste in the Caspian sea. The ministry are endeavoring to find means of attracting foreign capital, and improving the methods of transportation, but it cannot be expected that foreigners will invest their money in Russia, unless they are protected better than at present, against the infamous attacks of the so-called national press."

HENRY C. OHLEN.

The visitor from the oil region in quest of information at the seaboard, rarely met a more courteous and accommodating gentleman than Mr. Henry C. Ohlen. His statistics on exports or any branch of the oil business, have always been regarded as strictly reliable. His many friends throughout the region will learn with sincere regret of his rather sudden death. The Oil, Paint and Drug Reporter says:

The announcement of the death of Mr. Henry C. Ohlen caused considerable surprise on the floor of the New York Petroleum Exchange last Monday. He was prostrated on April 1st by nervous exhaustion at his home in Madison, N. J., but his condition was not considered serious. He rapidly grew worse, however, and last Friday evening breathed his last, aged, 48 years. Mr. Ohlen has been identified with the petroleum business for twenty-seven years. For two years he served as first vice president of the New York Petroleum Exchange, and the same length of time as director. Recently he held no official position in the Exchange, but was operating on the floor as a broker, having offices in the fifth story of the Welles building, with Mr. W. Fisher as assistant. The deceased gentleman was as well known in the oil regions as here, and commanded a large and lucrative business. He leaves a wife and five children who are well cared for. A meeting was held by the Exchange on Monday at noon to take action on the death of Mr. Ohlen. A committee of three, consisting of Messrs. M. Mitchell, Fred. Fisher and W. Fisher, were appointed to attend the funeral.

Palliser, Palliser & Co., of Bridgeport, Conn., publish a number of practical and artistic works on architecture that are invaluable to any one contemplating the erection of any kind of building. *Palliser's Useful Details*, published at $3, consist of 40 plates, size of each 20x26 inches, and should be in the hands of every builder, mechanic, or any one interested in the building arts. No matter what kind of a job is to be done, the book contains the idea to help out.

A number of Warren capitalists have secured 25,000 acres of Kentucky lands on which they will sink several test wells. A rig has been erected on Otter Creek in Wayne county, and John Markham of Bradford will start the drill in the early part of May.

MARCH OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN MARCH, 1884

Allegany Field.

Scio.

Lot. Owner.	Barrels.
1, Pickering & Smith No 7	8
1, Hostetter & Straight	5
4, Minnow Oil Co No 6	8
11, R Carroll No 4	10
11, Griffin & Co No 7	6
12, Allen & Morse No 1	8
50, The Union Oil Co No 5	10
Wells	7
Production	55

Alma.

1, Phillips Bros No 11	8
4, Watson & Thompson No 9	10
17, Carlin, Bussell & Co No 11	10
17, Col Scott No 5	5
17, New Milford Oil Co No 4	5
17, do do No 5	10
18, H L McMullan	8
18, Mallory & Co No 7	10
20, Wm Coast No 17	20
20, Willets & Duke No 10	8
23, Dowe & Browning No 6	15
38, E T Anderson & Co No 7	10
38, Weiser Bros No 5	10
38, do No 7	10
38, do No 20	10
39, Weeter & Baldwin No 6	10
124, Willets, Duke & Ranke est	5
141, Willets & Duke No 5	8
141, do do No 6	8
141, do do No 7	8
William Chambers No 3	8
Pikeville, Harkness No 2	8
Wells	22
Production	204

Wirt.

33, Miner, Wellman & Fuller	20
45, Snow & Co	15
52, Lester Jordan & Empire Gas Co	8
57, William Coast	dry
Wells	4
Production	43
Dry	1

Bolivar.

6, A P Tanner No 1	5
7, Coast Oil Co No 18	12
7, do do No 25	10
7, do do No 26	10
Crandall, W & J Duke & Willetts	10
15, Sawyer & Co No 7	5
15, Empire Gas Co (Woodward farm)	8
16, Fay & Co	8
Howe farm, Fay & Co No 3	10
24, Riley Allen, No 7	10
23, Johnson & Conroy No 8	6
23, do do No 9	5
23, Irvine & Morgan est	8
30, H. Stewart No 3	8
30, Hogan, Murphy & Basch	5
31, Hydrick Bros & Foote Bros	10
38, Hanley & O'Shea	5
45, Adams & Co	6
63, Whitney Bros No 8	10
63, Columbia Oil Co No 16	10
Wells	20
Production	161

Clarksville.

9, H Werthman	8
9, Hill, Childs & Co	8
10, Dalrymple & Bro	10
28, Patterson, Pentzer & Love	5
Wells	4
Production	31

Genesee.

7, Rollin Dow	10
8, I Willets No 51	10
15, McCalmont Oil Co No 31	12
21, Empire Gas Co No 2	10
21, A T Palmer No 1	10
22, I Willets No 11	6
23, Emery Oil Co No 11	7
23, do do No 12	7
29, N C Clark	5
31, Hugh McMullan No 23	5
Wells	10
Production	82

Miscellaneous.

Franklinville, Franklinville Oil Co	dry
Wells	1
Production	—
Dry	1

Bradford Fied.

East and West Branches.

Farm. Operator.	Barrels.
McKinney, McClure & Co	6
Clark, Chapin & Chapman	8
Hinchey, S W McMurray & Co No 1	6
O'Brien, Geo W Newman	5
Bingham, G H Van Vleck No 28	10
do Forest Oil Co No 11	10
do lot 197, R J Straight No 5	8
do lot 178, do do No 10	8
Jewett, Hamsher, Weaver & Co No 9	10
Dent, P C L & P Co, No 58	10
do do do No 59	10
do do do No 60	5
do Whitney & Wheeler No 35	10
do Emery Oil Co No 22	10
Owens' pur., Hall & Slocum	4
Taylor, Atlas Oil Co No 7	10
do do do No 8	10
Hawkins, P C L & P Co No 23	8
do Union Oil Co No 13	12
Taylor, Herrick & Suttle No 7	8
Lovejoy, Willoughby & Thayer No 10	8
Bingham, Bayne, Fuller & Melvin No 59	10

Quintuple.

Lot 196, Boggs & Sterrett	10
225, Vera & Farner	10
Wells	24
Production	206

Kendall Creek.

Bradley, S S Fertig	8
Melvin, P. C L & P Co No 81	10
do do do No 82	10
Grow, P T & W C Kennedy No 1	3
Duke, Charles Duke	5
W G Duke, Suhr & Shopperle No 7	8
Johnson, Randall Bros & Barton	6
McGrew, Columbia Oil Co No 40	10
Wells	8
Production	60

Foster Brook.

E T Co, Boyne, Penny & Coleman No 5	10
do do do do No 6	10
do H L Blackmarr & Jones No 15	10
do do do do No 16	10
do F L Blackmarr & Post No 9	10
do do do do No 10	10
do do do do No 16	10
do A E Jones No 4	10
do Enterprise Transit Co No 80	12
Willetts, O Smith	8
C B & H, C Foley No 6	8
do Miller & Odell No 5	10
do George Corson	8
Wells	13
Production	126

Four Mile.

Van Campen, W M Brown	10
do do	8
do do	8
do George Van Campen & Sons No 18	12
do Adams, Carson & Co	8
do Tarbell & Co	10
do G L Watson & Co No 1	7
Zaph, Franchot Bros No 4	10
do do do No 7	10
Widow Carrol, Thomas Kervin No 5	10
do do C J Hickey No 5	8
Moultrous, John Coast, No 8	10
Stevens, Wm Chambers No 3	8
do William Burns & Co No 3	8
Sparger, Chamberlain No 7	10
Stevens, C B Whitehead	8
Nessell, Burns & Co	2
Stewart, E M Johnson	8
Wells	18
Production	155

Indian Creek.

Pine lot, R G Bailey No 12	8
Shattuck, Emery Oil Co No 8	6
Loup, Hazelwood Oil Co No 46	8
Barse, Geo V Forman, agt U O Co, No 33	10
do Bussell & Co	8
Elling, Forest Oil Co No 4	6
W L Curtis, Riley Allen	8
J J Curtis, Morse & Brown	5
Sparger, Bradford Oil Co No 4	10
do do do No 5	10
do do do No 3	10
Zimmer, C V White & McKinney No 4	5
do Shear Brothers No 1	5
Dean pur, Bradley, Curtis & Dean	dry
Hill, Bovee & Duck No 4	8
Keating, J L McKinney & Co No 30	10
Morse, J R Morse	5
Wells	17
Production	112
Dry	1

Cole Creek.

Bordell, Kelly	5
Bingham, Forest Oil Co No 34	12
do lot 495 Forman & U O C No 1	15
do lot 534 U O C (Forman agt) No 23	20
do lot 534, do do do No 24	25
Wells	5
Production	77

Kinzua.

Bingham, The Union Oil Co No 44	3
do do do do No 50	30
Wells	2
Production	33

Warren and Forest.

Glade and other Towns.

Tract. Owner.	Barrels.
Wardwell, Benedict & Robinson No	15
Mowris, King & Magee No 5	20
do, do do No 6	8
Cobham, Union Oil Co No 7	10
do do do No 9 est	50
do do do No 10 est	40
Meashon, Anchor Oil Co No 5	dry
do do do No 6	8
McNally, Steelsmith	dry
Stewart, Wesley Chambers No 1	50
J Roy, Calhoun & Co	dry
P Bradford, P M Smith & Anchor Oil Co	dry
Shirley, J R Johnson & Co	gas
Uhl, J R Johnson & Co No 3	6
Irvine, T J Melvin	4
do Brown Bros	3
O H & S, Wesley Chambers No 3	5
Sweating, Magee & Smith	4
Branch, S C Rhodes	3
Schofield, A H Daniels No 7	4
Magee, Jos Magee	5
Wells	21
Production	235
Dry	5

Clarendon.

36, Armor, Clark & Foster	dry
53, The Union Oil Co No 16	6
55, D Beatty & Son No 32	6
464, Columbia Oil Co No 9	10
467, Wm Pagett No 1	4
105, F W Pratt No 1	5
105, R I Shugart No 6	8
107, Johnson & Winthrop	5
107, Fay & Lawton No 13	5
108, C H Filkins No 1	6
497, Mooney & Griffin No 3	6
497, C C Duffield & Co No 9	8
527, S C Rhodes No 6	6
562, F H Rockwell & Co No 5	8
494, Kemp & Solliday	6
611, (Cherry Grove) Forest Oil Co No 17	10
Wells	16
Production	99
Dry	1

Tiona.

109, J S Patterson No 19	6
110, Fertig & Henne No 8	8
110, do do No 9	6
159, do do No 16	6
165, Wm Pagett No 12	6
165, do do No 13	6
161, A & S Short, No 3	8
160, J S Patterson No 14	6
160, do do No 15	6
160, do do No 16	5
160, do do No 17	5
160, do do No 18	6
165, Hill & Powell No 7	6
200, Wesley Chambers No 1	5
205, Halleck & Pratt	3
Wells	15
Production	88

Cooper District.

Henry lands, McCalmont Oil Co No 19	5
do Syndicate do No 15	20
do do do No 16	20
2735, Reno Oil Co No5 est	15
3198, Clark, Foster & Murphy No 5	20
3198, do do No 6	15
Cooper tract M W S & Co No 31	15
do do do No 32	25
do do do No 33	17
Henry lands, Anchor Oil Co No 34	12
do H B Porter No 7 est	50

368, Horton, Crary & Co . . . . . dry
438, Shank & Emery No 10 75
438, do do No 11 40
Henry, West Porter, McCalmont Oil Co No 3 35
do McCalmont Oil Co No 4 20
do McCalmont Oil Co No 14 25
439, McCalmont Oil Co No 5 100
439, do do No 8 12
439, do do No 9 70
439, do do No 10 110
439, do do No 11 75
439, do do No 15 30
407, Cochran Bros No 1 6
407, do do No 2 65
Williamson, J L McKinney & Co No 7 . . 60
Clapp, J. M. Clapp No 3 250

Wells 27
Production 1187
Dry 1

Balltown.

5236, May, Kelly & Grandin No 21 est . . 50
5230, James Welch No 5 est 30
4821, Balltown Oil Co No 8 40

Wells 3
Production 120

Miscellaneous.

Warrant 5134, Forest co P M Shannon . . dry
do 5104, do Syndicate No 1 . 6
do 5104, do do No 2 . dry
Lot 152, McKean co G H Dimmick . . . . dry

Wells 4
Production 6
Dry 3

Lower Country.

Venango.

Farm.	Operator.	Barrels.
Mouth of Big Sandy,	Galbraith	2
Epley,	Lee & Swan	8
Cook,	W Chambers	dry
Flinchpaugh,	do	5
do	Cratty	dry
do	Dale Bros	30
McCalmont,	Richardson & Co.	dry
S Hughes,	Shaffer & Co	dry
Tract 75,	Fisher Bros	dry
S Hughes,	Dan Baum	4
Biery,	Richardson & Williams No 1	5
do	do do do No 2	6
do	do do do No 3	9
Echols	do do do	6
W & K,	Wolfe & Kugler	8
Rembold,	Dale & Smullin No 7	6
do	do do No 8	25
do	Woods & Graham No 4	4
do	do do No 5	85
Kauffman,	P H Judd & Co	6
do	A P Dale	7
Piaget,	Fisher Bros	dry
Cubbison,	Roess Bros	10

Vicinity Emlenton.

Truby, J C Truby 15
King, King Bros & Heeter 3
Scott, Barnard & Scott 4
Leslie, Stevens 15
Gosser, Crawford & Son. 4
Haggerty, E Goodrich 5
Nelson, J J Nelson 6
Weller, J Weller. 7

Wells 31
Production 285
Dry 6

Clarion.

Johnson, J Johnson . . . . . dry
Sweitzer, Bartlett & Co . . . . . dry
Graham, W Berlin 2

Wells 3
Production 2
Dry 2

Butler and Armstrong.

Wallace, A Shidemantle No 5 50
Kaltenbach, Forest Oil Co . . . . . dry
Aylshurst, do do 5
Saylor, Phillips Bros 3
Mulligan, McGuire & Co 25
Kamerer, W S Williams 4
East Brady, Unknown. 5

Wells 7
Production 92
Dry 1

DRILLING WELLS, RIGS UP AND BUILDING APRIL 1.

Allegany Field.

Scio.

Lot.	Owner.	Depth.
1,	Pickering & Smith No 8	100
Emerson farm,	Dean & Irvin	rig
2,	Waco Oil Co (old)	rig
2,	Coast Oil Co No 28	800
2,	do No 29 (old)	rig
2,	do No 30 (old)	rig
2,	do No 31	rig
3,	Frank Campbell (old)	rig
3,	Coyle & Co (old)	rig
4,	Charles Taylor (old)	rig
4,	Minnow Oil Co No 5	400
4,	do do No 7	rig
11,	Griffin & Co No 8 (old)	rig
11,	Lowcomer & Turner (old)	rig
11,	Thompson & Vesey No 3 (fishing)	800
11,	do do No 4	400
11,	do do No 5	rig
11,	Reuben Carrol	rig
12,	Allen & Morse No 3 (old)	rig
47,	A J Applebee	900
50,	The Union Oil Co No 6	rig
50,	do do No 7	rig
50,	do do No 8	rig
50,	do do No 9	rig

New rigs 9
Old rigs 9
Drilling 6

Total 24

Alma.

1,	Phillips Bros No 12 (old)	rig
1,	do No 13	rig
1,	do No 14	rig
1,	Manhattan Oil Co No 7	700
3,	M J McMullen & Co No 6	sand
3,	do do do No 7	rig
4,	Crane & Co (old)	rig
4,	Matson & Thompson No 10	300
4,	Fertig Bros	600
4,	Chamberlain & McConnell	300
5,	Breckinridge & Mackin	700
17,	Carlin, Bussell & Co No 12	200
18,	Mallory & Co No 2	400
18,	H L McMullan	600
18,	do do	200
18,	do do	rig bldg
19,	Rumsey & Lovell No 1	400
20,	Wm Coast No 18	400
20,	do do No 19	rig
20,	do do No 20	rig
20,	Willets & Duke No 9	500
21,	Finigan & Co No 12	200
23,	Dow & Browning No 7	rig
23,	Vance & Horton (old)	3 rigs
24,	New Milford Oil Co No 6	200
24,	do do No 7 (old)	rig
24,	Parkman No 2	200
24,	W F Jones	2 rigs
26,	Last Chance Oil Co	rig
37,	Willetts & Duke No 2	400
38,	E T Anderson & Co No 8	700
38,	Weiser Bros & Co No 6	150
38,	do No 8	rig
38,	do No 9	rig
38,	do No 10	1100
38,	do No 2 (fishing)	700
38,	do No 22	rig
38,	do No 24	rig bldg
39,	Weeter & Baldwin	rig bldg
40,	A T Palmer No 8	1000
40,	do No 9	rig
44,	Torrey & Co	rig bldg
71,	Willets	sand
86;	O'Connor & Co	300
88,	Duke & Co (old)	rig
106,	Thornton & Dobbins No 2 (fishing)	500
107,	I W Shirley No 2	rig
120,	McCalmont Oil Co No 1	rig bldg
120,	do do No 2	rig bldg
142,	Bolivar Oil Co.	600
14,	Willets & Duke No 8	rig bldg
14,	do do No 9	rig bldg
Pikeville,	Harkness No 3	100
142,	Dean & Smith	500
142,	do do	rig
142,	do do	rig bldg

New rigs 23
Old rigs 7
Wells drilling 27

Total 57

Wirt.

33,	Miner, Wellman & Fuller No 17 (old)	rig
33,	do do No 18	rig bldg
Nile,	Nile Oil Co	rig
Maxon farm,	Applebee, Green & Co	rig
51,	Lester, Jordan & Empire Gas Co	200
52,	Col Dyer, Farrel & Co	rig
	Anchor Oil Co	drilling
	do do	rig bldg

New rigs 5
Old rigs. 1
Wells drilling 2

Total 8

Bolivar.

6,	I Collins No 3 (old)	rig
6.	A P Tanner No 2	rig
7,	J D Downing No 7	sand
7,	W & J Duke No 5	700
7,	do No 6	rig
Vosburg farm,	W & J Duke No 15	rig bldg
7,	Coast Oil Co No 19	rig
7,	do No 20	rig bldg
7,	do No 24	drilling
7,	do No 27	100
7,	do No 29	100
7,	do No 4 (fishing)	400
7,	do No 5 (old)	rig
Crandall,	W & J Duke & Willetts	100
7,	A A Hopkins No 16 (old)	rig
8,	Empire Gas Co (old)	rig
8,	Jordan Oil Co	700
8,	do do	rig
15,	Kelly & McMurray No 1	500
15,	O P Boggs (old)	rig
15,	Sawyer & Co No 8 (fishing)	1300
15,	do do No 9	600
15,	do do No 10	rig bldg
15,	Empire Gas Co (Sawyer farm) No 2	800
15,	do do No 3	rig
15,	do do No 4	rig bldg
15,	O P Boggs No 4	800
15,	McCalmont Oil Co No 3	300
15,	(Sawyer farm) Sawyer & Co No 2	rig bldg
23,	H Stewart	rig bldg
24,	H M Ernst No 5	drilling
23,	Johnson & Conroy No 10 (old)	rig
23,	do do No 11	rig
24,	J O Johnston	2 rigs bldg
30,	H Stewart No 3	700
30,	Fultz & Lowry	200
30,	do do	rig
31,	Fisher Oil Co No 8 (old)	rig
38,	Hanley & O'Shea	drilling
Noble farm,	A Short No 2	500
Woodard,	Early boys	rig bldg
Henry's Switch,	M A Smith	rig

New rigs 17
Old rigs 7
Drilling 19

Total 43

Clarksville.

9,	Heuston & Brecht No 4 (old)	rig
9,	Merritt & Co (old)	rig
9,	P T Kennedy No 12	400
10,	Whipple Bros No 6	800
10,	do do No 7 (old)	rig
	Angell Oil Co	rig bldg
10,	Chauncy Oil Co	100
10,	do do	rig bldg
13,	Goldsborongh	drilling
17,	William Cranston (old)	rig
17,	John McCool	600
17,	do do	rig
18,	McKelvy & Co	100
Barto farm,	Cuba Gas Co	drilling
13,	Goldsborough	drilling
34,	Love & Co	rig bldg

New rigs 4
Old rigs 4
Wells drilling 8

Total 16

Genesee.

8,	I Willets No 53	800
8,	do (old)	rig
8,	do No 54 (old)	rig
14,	Chauncey Oil Co No 16 (old)	rig
14.	Empire Gas Co (old)	2 rigs
14,	Robert Cook (old)	rig
15,	McCalmont Oil Co No 20 (old)	rig
15,	do do No 21 do	rig
15,	do do No 22 do	rig
15,	do do No 23 do	rig
15,	do do No 24	700
16,	Laney Bros No 8	600
21.	Empire Gas Co No 3	1000
21,	A T Palmer	rig bldg
22,	I Willets No 12	1000
22,	do No 13 (old)	rig
22,	do No 14 do	rig
22,	do No 15 do	rig
23,	Hughes & Coughlin No 9	rig
23,	Emery Oil Co No 13	100
23,	do do No 14	rig
23,	do do No 15	rig
Champlain,	Emery Oil Co No 6	300
do	do do No 7	rig
23,	Chauncy Oil Co	rig
29,	William Cranston (old)	rig

31, Hugh McMullan No 24 600
31, do do (old) . . . . . rig
38, S E Young (old) . . . . . rig

New rigs 6
Old rigs 16
Drilling 8
—
Total. 30

Miscellaneous.

Wellsville, Palmeter & Co (old) . . . rig
Tioga county, Whitehead & Co . . . drilling
Willing, lot 80 O'Donnel, Manning (old) rig
North Whitesville, Stowe & Co . . . . drilling
Friendship, Higgins & Co 900
Willing, lot 40 J W Shirley 300

New rigs . . . . . –
Old rigs 2
Wells drilling 4
—
Total 6

Bradford Field.

East and West Branches.

Farm.	Operator.	Depth.
Paton, McClure & Co		100
Kellogg, Westmoreland Oil Co		rig
Miller, J W Sherman		800
Whittaker, Chapin & Chapman		100
Willis, McCray Bros No 29		rig
Hooker, Chapin & Chapman		rig bldg
Wall, C J Everson		rig
Clark, Barnsdall Brothers		rig
Beardsley, Curtis & Bronson		rig
Foster, C H Foster		rig
do	Frank T Barker	500
Buchanan, Buchanan Brothers		rig
Davis, F W Davis		rig
Bingham, G H Van Vleck, No 24 (old)		rig
do	do No 29	1000
do	do No 30	100
do	do No 31	rig bldg
do	lot 168, R J Straight No 8	500
do	lot 178, do do No 11	rig
do	Forest Oil Co No 13	600
Jewett, Hamsher, Weaver & Co No 10		500
Dent, P C L & P Co No 61		500
do	do do No 62	200
do	do do No 63	rig
do	Whitney & Wheeler No 36	1700
do	do do No 37	1200
do	do do No 38 (old)	rig
do	do do No 39	rig
do	Emery Oil Co No 23	100
King, Barnsdall Brothers No 2		sand
do	do do No 3	rig
do	do do No 4	rig
Mill lot, Whitney & Wheeler No 8		rig
do	do do No 9	rig
Crooker, Jennings & Curtis No 10		rig
Inglesby, P T Kennedy		rig
West Branch, H Emery & Co		drilling
do	do do	rig
Howard, Page & McCormack		500
Taylor, Atlas Oil Co No 9		1000
do	do do No 10	rig
do	Herrick & Suttle	drilling
Lovejoy, Willoughby & Thayer No 3		rig
do	do do No 4	500
Bingham, Bayne, Fuller & Melvin No 60		100
Paul,	do do No 3	300
Hawkins, Union Oil Co No 14		sand
Reed, Bradford Oil Co No 8		1000
do	do do No 9	rig
do	do do No 10	rig
do	do do No 11	rig
Custer, Leopold Brothers		drilling
do	Martin & Gillespie	rig
Kissam, Wm Fleming		drilling
Warrant 3412, Roth & Taylor		1000
do	4914, Kearns & Kennedy	1600
Sugar Run, W H D Chapin (old)		rig

Quintuple.

25, E Strong & Co No 2 (old) . . . . . rig
44, J W Humphrey (old) . . . . . rig
50, B F Brinton No 3 1200
83, Pat Newell 1200
194, Atwater Oil Co . . . . . rig
Booth Bros. . . . . rig bldg
220, Abbott, Proper & Co . . . . . rig
275, Lee Phillips 1100

New rigs 29
Old rigs 5
Drilling 31
—
Total 65

Kendall Creek.

Storms, Wright . . . . . sand
Shedd, P O Buchanan 1400
Bingham, Mina Oil Co No 7 1400
Melvin, P C L & P Co No 83 150
do do No 84 . . . . rig
do do No 85 . . . . . rig
Grow, P T & W C Kennedy No 2 . . rig
Chamberlain, Thompson & Lane No 7 600
Mehan, Zane & Taylor . . . . . rig
Sill, McCray Bros . . . . . rig bldg
Lafferty, G H Van Vleck No 39 900
Borden, Urquhart & Lavens (old) . . rig
Borden, (Tram Hollow) No Name Oil Co . . . . . drilling
Norton, Dan Clark No 2 500
do do do No 3 . . . . . rig bldg
do F W Mitchell 100
Keating, Sproul & Shaw . . . . . rig
Rixford, Dolly & Arnold . . . . . rig
Irons, Emery, Boyer & Breese . . . . sand
do Carter. . . . . rig

New rigs 9
Old rigs 1
Drilling 10
—
Total 20

Foster Brook.

E T Co, Boyne, Penny & Coleman No 7 500
do do do No 8 rig
do do do No 9 rig
do H L Blackmarr & Jones No 17 . 200
do do do No 18 . rig
do F L Blackmarr & Post No 8 . . rig
do do do No 13 . . drilling
do do do No 14 . . rig bldg
do A E Jones No 3 1000
do do do No 5 100
do do do No 6 . . . . . rig
do do do No 7 . . . . . rig bldg
do Enterprise Transit Co No 81 (old) rig
do do do do No 82. . . 500
do do do do No 83. . . rig bldg
Borden, R W Evans No 3 500
Willets, I Willets No 27 1000
do Willets & Young . . . . . drilling
Lafferty, O A Childs No 17 500
C B & H, Charles Wilder 800
do Smith & Wood No 5 100
do do do do No 6 . . . . rig
do Coldren & Wolf No 13 . . . 600
do do do No 14 . . . rig
do Smedley Brothers . . . . . rig
do Josett Brothers . . . . . rig
do Roy & Archer . . . . . rig

New rigs 14
Old rigs 1
Well drilling 13
—
Total 28

Four Mile.

Van Campen Wm M Brown . . . . . rig
do do . . . . . rig
do do . . . . . rig
do do . . . . 3 rigs bldg
do Geo Van Campen & Sons No 19 200
do Geo Van Campen & Sons No 20 (old) . . . . . rig
do Bannon 600
do Nelson & Jones No 4 . . drilling
do Wm Doe . . . . . drilling
do do (old) . . . . . rig
do Booth, Bovaird & Seyfang 900
do Adams, Carson & Co . . drilling
do do do do . . . 2 rigs
do Tarbell & Co (old) . . . rig
Zaph, Franchot Bros No 8 1000
do do No 9 300
Waters, Griffin & Howard No 2 [old] . rig
Widow Carrol, C J Hickey No 6 . . . drilling
do Thomas Kervin No 6 . . 200
do do No 7 . . rig
Moultrous, John Coast No 9 400
Stevens, William Stevens No 3 . . . . drilling
do William Chambers No 4 . . . 800
do Book & Rhodes . . . . . rig
do C B Whitehead No 2 100
do do do No 3 . . . . . rig bldg
Sparger, Chamberlain No 8 . . . . . drilling
Stewart, E M Johnson . . . . . rig
do do do . . . . . rig bldg
Karl, J Karl 900
Firkel, Franchot Bros No 6 . . . . . rig

New rigs 14
Old rigs 4
Drilling. 16
—
Total. 34

Indian Creek.

Pine Lot, R G Bailey No 9 (old) . . rig
do do No 10 200
Loup, Hazlewood Oil Co No 47 1200
do do do No 48 . . . . rig
do do do No 49 . . . . rig bldg
Barse, U O Co (G V Forman agent) (old) . . . . . rig
North Branch, J D Downing & Co [old] rig
do do do [old] rig
Keating, Forest Oil Co No 45 500
do do do No 46 . . . . rig
do do do No 47 . . . . . rig bldg
Hamlin, Miller & Odell 700
do do do . . . . . rig
Curtis W L, Riley Allen . . . . . rig
Dodge, Shear Bros No 7 (old) . . . . rig
Sparger, Bradford Oil Co No 2 1200
do do do No 10. . . . rig
M Campbell, Watson & Rogerson No 5 rig
Zimmer, Shear Bros No 2 (old) . . . . rig
do do No 3 (old) . . . . rig
do Forest Oil Co No 6 . . . . . rig bldg
Hill, Bovee & Duck No 5 . . . . . rig
Weston, Ramsey No 5 . . . . . rig bldg
Campbell, Waugh & Bligh 500
Keating, J L McKinney & Co No 31 . 700
do do do do No 32 (old) rig
do do do do No 33 . rig
do do do do No 34 . rig bldg
Barse, Moulton . . . . . rig
Morse, Treat & Mallory 800
Spiller, Spiller . . . . . rig bldg
Keating, Reid & Brown . . . . . drilling
Rounds, Forest O C & A J Thompson No 30 rig bldg

New rigs 16
Old rigs 8
Drilling 9
—
Total 33

Cole Creek.

Rew, Capt E Frawley (old) . . . . . rig
Bingham, Forest Oil Co No 35 500
do lot 418, Forman and U O C No 24 1200
do lot 494, Forman and U O C No 11 1600
do lot 536 Union Oil Co (Forman agt) No 29 . . . . . sand
do lot 534 Union Oil Co (Forman agt) No 25 600
do lot 534 Union Oil Co (Forman agt) No 30 100
do lot 534 Union Oil Co (Forman agt) . . . . . rig
Bingham, 587, John McKeown . No 12 1100

New rigs 1
Old rigs 1
Drilling 7
—
Total 9

Kinzua.

Bingham, Union Oil Co No 51 900
do do No 52 . . . . . rig
do do No 53 600
Bingham, 136, P T & W C Kennedy No 1 1600
do 137, P T & W C Kennedy . rig
do 135, J M Tait No 11 1000
do H P Malone No 23 . . . . . sand
Hoop, J M Tait . . . . . sand
Hagadorn, Hackett & Tait . . . . . rig
Lot 5, J J Carter No 14 400

Kinzua Village.

Campbell, Porter & Conley 600

New rigs 3
Old rigs . . . . . —
Drilling 8
—
Total 11

Warren and Forest.

Glade and Other Towns.

Tract.	Operator.	Depth.
Wardwell, Benedict & Robinson No 6		1000
do	do do No 7	rig
do	do do No 8 [old]	rig
Mowris, K & M pur Union Oil Co No 7		700
do	do do do No 8 .	300
do	do do do No 9 .	rig bldg
Cobham, Union Oil Co No 8		drilling
do	do do No 11	drilling
do	do do No 12	rig
do	do do No 13	rig
do	do do No 14	rig
R R lands, Hamilton & Co No 2 (old)		rig
Gartland, J A Gartland		rig
Stewart, Wesley Chambers No 2		rig bldg
Frost,	do do (old)	rig
Stewart, Anchor Oil Co No 1		rig
do	do do No 2	rig bldg
Shirley, J R Johnson & Co No 2		rig
Irvine, Anchor Oil Co No 3		sand
do	do do No 4	400
Rogers, Brown Bros.		rig
O H & S, Wesley Chambers No 4		100
Palmer, Anchor Oil Co		rig bldg
Roy, James Roy, No 10		200
do	do do No 11	200
do	do do No 12	rig
Beatty, D Beatty.		rig bldg
Magee, Jos Magee		rig
Branch, S C Rhodes		rig bldg
McWilliams, C A Campbell		drilling

Asylum, North Warren, Sanford & Jameson (old) rig
Owens, do do Phil Becker & Co . . . . sand
Lesler, Lesler & Son (old) . . . . . rig

New rigs 18
Old rigs 4
Drilling 12

Total 34

Clarendon.

Lot.	Operator.	Depth.
36,	Borchart & Smith No 4	drilling
53,	Union Oil Co No 17	rig bldg
54,	D Beatty (old)	rig
55,	D Beatty & Son No 32	150
55,	do do No 33	rig
55,	do do No 34	rig bldg
54,	Bell, Hazelton & Stone	150
54,	Mooney & Griffin	rig
462,	Stoneham Oil Co	rig
462,	D Riddlesperger	rig bldg
464,	do	1000
464,	do No 2	rig
464,	Logan & Cramer	rig
464,	Columbia Oil Co No 10	850
464,	do do	150
464,	do do	rig
464,	M B McManus	rig
461,	Ludlow & Co	rig
497,	W Benedict No 12 (old)	rig
495,	J Smith & Son No 2 (old)	rig
497,	Wm Pagett No 2	rig
79,	Thayer & Crosby No 4 (old) . . .	rig
79,	Armor & Bronson	100
79,	Murphy & Adams	drilling
105,	P Goldwin.	rig bldg
105,	R I Shugart No 7 (old)	rig
105,	Shugart & George No 9 (old) . . .	rig
105,	Steelsmith, Ross & Co	450
106,	do & Taggart	rig
106,	C C Duffield & Co No 4	rig
107,	Fay & Lawton No 14	rig
107,	do do No 15	rig
108,	C H Filkins No 2	rig
108,	Hackett & Shirley No 1	400
108,	do do No 4	rig
497,	F W Pratt (old)	rig
494,	Kemp & Solliday	drilling
494,	do do	rig
497,	Murphy & Adams	drilling
529,	Beecher & Copeland	drilling
530,	Whitehill & Porter No 4	drilling
530,	do do No 5	rig
526,	F G Keatley No 2	sand
526,	do do Ns 3	rig
527,	F H Rockwell & Co No 11	100
561,	do do do No 6.	rig
561,	do do do No 7.	rig
531,	C A & D Cornen No 1	200
531,	do do No 2	rig
556,	do do No 7	1400
556,	do do No 8	sand
555,	Nickel, Munn & Co No 3	sand
675,	(Cherry Grove) Waid & Dunham .	800
591,	do do Taylor & Kline No 2	rig
584,	Clark & Foster	100

New rigs , ... 25
Old rigs 8
Drilling. 22

Total 55

Tiona.

Lot.	Operator.	Depth.
103,	Fertig & Henne No 7	sand
109,	J S Patterson	200
109,	do do	600
109,	do do	900
109,	do do	rig
109,	do do	rig bldg
109,	Schonblom & Townsend No 1 . . .	900
109,	do do No 2 . . .	300
109,	do do No 3 . . .	rig
109,	do do No 4 . . .	rig
110,	Fertig & Henne No 10	sand
110,	do do No 11	rig
110,	do do No 12	rig
159,	do do No 17	500
59,	do do No 18	rig
160,	J S Patterson	200
161,	A & S Short No 3	rig bldg
164,	Helm & Mealey, No 3	200
165,	Wm Pagett No 14	rig
165,	do No 16	rig
165,	C H Coffin & Co No 2 (old)	rig
165,	Hill & Powell No 8	rig
165,	do	300
200,	Wesley Chambers No 4	500
201,	Sage, Kelley & Co	rig
242,	Morgan & Solliday No 3	100
242,	Anchor Oil Co	rig bldg

New rigs 13
Old rigs 1
Drilling 13

Total 27

Cooper District.

Tract.	Operator.	Depth.
Henry lands,	McCalmont Oil Co No 21	drilling
do	do do No 22	rig
do	do do No 23	rig
do	do do No 24	drilling
do	do do No 29	rig bldg
do	Syndicate Oil Co No 17	300
do	do do No 18	200
2735,	Reno Oil Co No 6	rig
3198,	Clark, Foster & Murphy No 7 . .	100
Fox lands,	Kerberger Horton & Co . .	400
Henry lands,	H B Porter No 9	800
do	do do No 11	1500
Cooper,	M W S & Co No 34	300
do	do No 35	rig
do	do No 36	rig bldg
Lot 369,	J M Clapp No 4	100
Lot 438,	Shank & Emery No 13	800
do	do do No 14	100
do	do do No 15	rig
do	do do	rig bldg
Lot 396,	Horton, Crary & Co No 7 . .	rig bldg
West Porter (Henry lands),	McCalmont Oil Co No 15	sand
439,	McCalmont Oil Co No 12	1500
439,	do do No 13	100
439,	do do No 16	700
439,	do do No 17	200
439,	do do No 18	rig
439,	do do No 19	rig bldg
439,	do do No 20	rig bldg
Williamson,	J L McKinney & Co No 8	sand
do	do do do No 10	650
do	do do do No 5	rig
Clapp pur,	J M Clapp No 4	200
do	do No 5	rig bldg

New rigs 14
Drilling 20

Total 34

Balltown.

Lot.	Operator.	Depth.
5236,	May, Kelley & Grandin No 22 . .	sand
5236,	do do No 23 . .	rig
5236,	do do No 24 . .	rig bldg
3194,	Porcupine Oil Co No 18 (old) . .	rig
751,	(Cherry Grove) Porcupine Oil Co	rig
4821,	Balltown Oil Co No 19	sand
4821,	do do No 20	rig
4821,	do do No 21	rig bldg
4792,	Howe Oil Co	rig bldg

New rigs 6
Old rigs. 1
Drilling 2

Total 9

Miscellaneous.

Irvinetown,	Barnsdall & Co	drilling
Scott Run,	Campbell (old)	rig
Pleasant Township,	Benedict & Curtis	drilling
Warrant 3174, lot 49	Arters & Co . . .	900
do 3672,	Forest J. R. Johnson & Co	300

Old rigs 1
Drilling 4

Total 5

Lower Country.

Venango.

Farm.	Operator.	Depth.
Scrubgrass,	Unknown	drilling
Sutton,	Anderson Bros	sand
Rockland,	Dale Bros	drilling
Flinchbaugh,	do No 20	250
Biery,	Richardson & Williams No 4 (old)	rig
do	do do No 5. . .	rig
W A Hughes,	Hughes & Co (old) . . .	rig
Rembold,	Dale & Smullin No 9	300
do	do do No 10. . . .	rig
do	do do No 11. . . .	rig
do	J B Smithman	drilling
do	Woods & Graham No 6 . . .	drilling
do	do do No 7 . . .	rig
Echols,	P H Judd & Co	350
W & K,	Wolfe & Kugler No 4	rig
Gormley,	Richardson & Williams . . .	sand
Kaufman,	P H Judd & Co	rig
Tract 67,	J B Smithman	rig
McBride,	Unknown	rig
Foster,	Fisher Bros	drilling

Vicinity Emlenton.

Schmuck,	A Schmuck	150
Comstock & Rowland,	Goodrich & Hannifan (old).	rig
Russell,	W F Baum	drilling
Middleton,	Potorff Bros	500
do	Wm Foster	700
Smith,	C Weible (old)	rig
L Sloan,	Unknown (old)	rig
Weller,	J Weller	sand
do	do (old)	rig
Vacant lot,	Klingler, Saulsbury & Co .	800
Weller,	R W Porterfield	sand
do	E Goodrich	sand
Hunter,	Weaver & Co	200
F & M,	Flynn & Mackin	250
do	T J Flynn (old)	rig
Unknown,	Black & Co	200

New Rigs 8
Old Rigs 7
Wells drilling 21

Total 36

Clarion.

Delo,	G P Delo (old)	rig
Red Banks,	Wm Reynolds	300
Lehigh,	Pye & Co	rig
Washington twp,	Pine Grove Oil Co .	rig

New Rigs 2
Old Rigs 1
Wells drilling 1

Total 4

Butler and Armstrong.

Wallace,	A Shidemantle No 6	600
do	Fisher Bros No 1	150
do	do do No 2	drilling
do	do do No 3	rig
do	do do No 4	rig bldg
do	do do No 5	rig bldg
Hamel,	Forest Oil Co	500
McCalmont,	Phillips Bros No 5	1000
do	do do No 6	800
do	do dd No 7	500
Haley,	do do	800
Reiber,	Baldridge Oil Co	1200
Pierce,	Jas S Cooper	550
Henderson,	Johnson Bros	drilling
Black,	Black Farm Oil Co	700
Campbell,	Dennison & Hoyt.	150
Martin,	Showalter Bros & Hartman .	250
Mulligan,	McGuire & Co	rig
Muenster,	Phillips Bros	drilling
Forringer,	Stevens & Co	550
Turner,	W J McKee (old)	rig
East Brady,	Unknown (old)	rig

New Rigs 4
Old Rigs 2
Wells drilling 16

Total 22

During the last three months a large number of gas pumps have been used in Cherry Grove. One dealer in second-hand hardware transported 113 from Oil creek and Fagundus and sold them to Cherry Grove operators. Some of the old wells which had struck a gait ranging from five to eight barrels, were temporarily raised to thirty and forty barrels by the use of these pumps. The pipe line runs of the Cherry Grove district for the past three months indicate that the production has not been materially changed by this device, which is the last resort to stay the wells in a dying field. The January total runs were 23,787 barrels, the February 28,062, and those for March 31,020 barrels.

Subscribe for the Age.

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	FEBRUARY, 1884. Wells.	Prod'n.	Dry.	MARCH 1884. Wells.	Prod'n.	Dry.
Scio	5	42	.	7	55	.
Alma	34	308	.	22	204	.
Wirt	3	25	.	4	43	.
Bolivar	18	181	.	20	161	.
Clarksville	6	25	3	4	31	.
Genesee	7	64	.	10	82	.
Miscellaneous	3	.	3	1	.	1
Total	76	645	6	68	576	1

BRADFORD FIELD.

Division of Field.	FEBRUARY. Wells.	Prod'n.	Dry.	MARCH, Wells.	Prod'n.	Dry.
E. & W. Branches	15	134	.	24	206	.
Kendall Creek	11	72	.	8	60	.
Foster Brook	12	110	.	13	126	.
Four Mile	9	80	.	18	155	.
Indian&Meeks Cr'ks	20	169		17	112	.
Cole Creek	4	62	.	5	77	.
Kinzua	5	68	1	2	33	.
Total	76	695	1	87	769	.

WARREN AND FOREST.

District	FEBRUARY. Wells.	Prod'n.	Dry.	MARCH. Wells.	Prod'n.	Dry.
Glade	18	131	1	21	235	5
Clarendon	15	87	.	16	99	1
Tiona	15	83	1	15	88	0
Cooper	14	1673	.	27	1187	1
Balltown	4	175	.	3	120	0
Miscellaneous	4	.	4	4	6	3
Total	70	2149	6	86	1735	10

LOWER COUNTRY.

District	FEBRUARY. Wells.	Prod'n.	Dry.	MARCH. Wells.	Prod'n.	Dry.
Venango	27	251	3	31	285	6
Clarion	4	15	1	3	2	2
Butler and Armstrong	6	84	1	7	92	1
Total	37	350	5	41	379	9

GRAND SUMMARY.

District.	FEBRUARY. Wells.	Prod'n.	Dry.	MARCH. Wells.	Prod'n.	Dry.
Allegany	76	645	6	68	576	1
Bradford	76	695	1	87	769	0
Warren and Forest	70	2149	6	86	1735	10
Lower Field	37	350	5	41	379	9
February Total	259	3839	18	282	3459	20
March Total	282	3459	20			
Difference	23	380	2			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	MARCH 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	APRIL 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	6	9	5	20	9	9	6	24
Alma	20	12	20	52	23	7	27	57
Wirt	1	.	4	5	5	1	2	8
Bolivar	17	4	22	43	17	7	19	43
Clarksville	4	3	5	12	4	4	8	16
Genesee	4	21	10	35	6	16	8	30
Miscellaneous	3	1	3	7	.	2	4	6
Total	55	50	69	174	64	46	74	184

BRADFORD FIELD.

Division of Field.	MARCH. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	APRIL 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	16	5	31	52	29	5	31	65
Kendall Creek	5	2	8	15	9	1	10	20
Foster Brook	17	.	10	27	14	1	13	28
Four Mile	19	3	20	42	14	4	16	34
Indian Creek	14	9	15	38	16	8	9	33
Cole Creek	6	1	5	12	1	1	7	9
Kinzua	3	1	7	11	3	0	8	11
Miscellaneous	.	.	.	.	.	.	.	.
Total	80	21	96	197	86	20	94	200

WARREN AND FOREST.

Division of Field.	MARCH 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	APRIL 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	10	7	14	31	18	4	12	34
Clarendon	13	9	19	41	25	8	22	55
Tiona	5	4	13	22	13	1	13	27
Cooper	13	.	25	38	14	.	20	34
Balltown	2	1	3	6	6	1	2	9
Miscelllaneous	1	2	6	9	0	1	4	5
Total	44	23	80	147	76	15	73	164

LOWER COUNTRY.

Division of Field.	MARCH 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	APRIL 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	17	6	31	54	8	7	21	36
Clarion	.	3	1	4	2	1	1	4
Butler & Armstrong	6	2	11	19	4	2	16	22
Total	23	11	43	77	14	10	38	62

GRAND SUMMARY.

Field.	MARCH 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	APRIL 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	55	50	69	174	64	46	74	184
Bradford	80	21	96	197	86	20	94	200
Warren & Forest	44	23	80	147	76	15	73	164
Lower Country	23	11	43	77	14	10	38	62
Total March. 1.	202	105	288	595	240	91	279	610
Total April 1	240	91	279	610				
Difference	38	14	9	15				

THE HOODOO WELL.

The Hoodoo well, on the southwestern corner of warrant 3668, Forest county, drilled by the oil scouts in 1883, had the following record: Drive pipe used 40 feet, sand at a depth of 450 feet; struck salt water in the Clarion sand at 587 feet. Found a pebble sand at 1475 feet, which produced about five bailers of oil in a tour of twelve hours. Found a sand rock from 1670 to 1709. Encountered 40 feet red sand, resembling the Cooper, at 1735. Stray sand, in which the drilling was hard, at 1900 feet. From 1900 to 2130 irregular formation of shells and slate.

Johnson & Co.'s well, 1,000 feet northwest of the Hoodo well, is reported a failure by the owners.

The drilling within the defines of the Ward-well pool during the past month has shown the territory to be very treacherous. The Union Oil Co.'s No. 11, in the producing group, is practically a failure.

Stock in the Bradford Exchange during March sold as low as $290 for a membership. In the Producers' Exchange memberships are in the market at $70.

The Phillips Bros. No. 5 on the McCalmont farm started at 150 barrels. It is one location east of other producing wells and does not open up anything new.

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, FEBRUARY, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., APRIL 3, 1884.

CUSTOMS DISTRICTS.	MINERAL CRUDE.		NAPHTHAS.		ILLUMINATING.		LUBRICATING AND PARAFFINE OIL.		RESIDUUM.		TOTAL.	
	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.
Boston & Charlestown, Mass.	. . . . .	. . . .	. . . . .	. . . .	241,850	34,074	10,710	3,851	. . . . .	. . . .	252,560	37,925
New York, N. Y.	3,976,126	334,312	822,778	73,691	21,081,441	2,104,234	746,336	154,952	514,374	38,918	27,201,055	2,706,107
Philadelphia, Pa.	. . . . .	. . . .	. . . . .	. . . .	3,354,041	324,621	140,250	28,050	1,050	50	3,495,341	352,721
Baltimore. Md.	. . . . .	. . . .	. . . . .	. . . .	350,288	24,665	. . . . .	. . . .	. . . . .	. . . .	350,288	24,665
San Francisco, Cal.	. . . . .	. . . .	440	123	15,620	3,221	483	310	. . . . .	. . . .	16,543	3,654
All other districts.	. . . . .	. . . .	2,600	312	140,949	22,223	227	205	. . . . .	. . . .	143,776	22,740
Total for Feb. 1884	3,976,126	334,312	885,818	74,126	25,184,189	2,513,038	898,006	187,368	515,424	38,968	31,459,563	3,147,812
Total for Feb. 1883	3,507,734	242,045	808,408	61,166	23,124,321	2,109,724	927,270	216,755	842,058	60,031	29,209,791	2,689,721
Total for 8 months, ended Feb. 29, 1884	45,189,349	3515,199	12,791,553	865,188	281,921,468	25,621,277	6,982,098	1 450,154	3,599,190	235,748	350,483,658	31,687,566
Total for 8 months, ended Feb. 28, 1883	37,288,174	2 764,182	12,865,487	994,135	265,921,369	23,101,210	6,320,997	1 502.241	3,621,030	238,469	326,017,057	28,600,237

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	Mar. 22, 1884. Barrels.	Feb. 23, 1884. Barrels.
London	329,696	360,585
Trieste	67,261	69,003
Seven Continental Ports	1,392,242	1,401,647
Total Stocks afloat and ashore	1,789,199	1,831,235
Decrease in Stocks since Feb. 23		42,036

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS MARCH 22, 1884.

	Stocks W'k end'g M'ch. 22		Stocks Afloat W'k end'g M'ch. 22		Unloading W'k end'g M'ch. 22		Grand Total Stocks Afloat & Unloading.		Receipts. Jan. 1 to M'ch. 22.		Shipments Jan. 1 to M'ch. 22.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	214,932	284,177	50,129	32,519	31,700	13,000	296,761	329.696	122,886	101,919	151,524	175,505
Trieste	10,947	52,268	22,033	4,493	4,000	10,500	36.980	67,261	6,098	95,619	62,835	52,834
Bremen	595,280	731,644	125,514	46,243	22,000	46,500	742,794	824,387	162,278	201,871	323,139	295,479
Hamburg	87,399	137,585	69,995	63,947	41,500	48,300	198,894	249,832	49,470	207,126	161,082	187,107
Antwerp	139,463	87,626	67,398	48,023	19,400	39,300	226,263	174,949	123,270	144,124	171,717	264,773
Rotterdam	38,374	47,884	14,699	10,946	5,500	. . . .	58,573	58,830	15,492	53,735	52,377	54,767
Amsterdam	36,382	60,245	18,442	. . . .	. . . .	. . . .	54,824	60,245	33,548	105,346	46,578	70,464
Stettin	10,333	14,183	21,744	4,000	. . . .	. . . .	32,077	18,183	3,219	5,482	26,071	51,136
Danzig	16,559	3,153	. . . .	663	. . . .	2,000	16,559	5,816	19,258	6,501	25,630	19,501
Total	923,792	1,082,320	317,792	173,822	88,400	136,100	1,329,984	1,392,242	406,535	724,185	806,594	943,227

	1881.	1882.	1883.	1884.
Total stocks exclusive Danzig, London and Trieste	353,869	705,633	907,233	1,079,167
Total afloat, exclusive Danzig, London and Trieste	212,431	203,345	317,792	173,159
Total unloading, exclusive Danzig, London and Trieste	160,000	242,500	88,400	134,100
Grand Total exclusive Danzig, London and Trieste	726,300	1,151,478	1,313,425	1,386,426
Total Shipments exclusive Danzig, London and Trieste	47,091	36,681	44,128	65,730
Total Shipments since January 1, exclusive Danzig, London and Trieste	825,380	694,400	780,964	923,726

THE CRUDE MARKET FOR MARCH, 1884.

Day of Week.	Day of Month.	Bradford.				Oil City.				New York.				Pittsburgh.			
		Opened.	Highest.	Lowest.	Closed.	Opened.	Highest.	Lowest.	Closed.	Opened.	Highest.	Lowest.	Closed.	Opened.	Highest.	Lowest.	Closed.
S	2	102¼	105⅛	102⅛	104⅞	101⅞	105⅛	101⅞	105	102¼	105	102¼	105	102	104⅞	102	104¾
M	3	105	106⅝	104⅜	104½	105½	106½	104¼	104¾	104⅞	106¼	104⅜	104⅜	105½	106⅜	104¼	104¾
T	4	104¾	104¾	103⅝	103¾	104¾	104¾	103⅝	103¾	104½	104¾	103¾	103⅞	104½	104⅝	103¾	103¾
W	5	103½	103⅝	100	100	103½	103½	100	100	103⅝	103⅝	99⅞	100	103⅜	103⅜	99⅞	100
T	6	99	99¾	98½	99	100	100	98⅜	99	99⅜	100	98½	98⅞	99¾	99¾	98¼	99
F	7	99	101½	99	100	99	101⅜	99	100⅛	99⅛	101½	99⅛	100⅛	98⅞	101⅜	98⅞	100⅛
S	8	100⅜	102	100⅛	101⅞	100¼	102¼	100¼	101⅞	100⅝	102¼	100½	101⅞	100⅛	102⅛	100⅛	101⅞
M	10	102⅛	103	100⅜	100½	102¼	103	100⅜	100⅝	102¼	103	100⅝	100⅞	102⅛	103	100½	100⅝
T	11	99¾	101⅜	99½	101¼	100	101⅜	99⅜	101⅜	99⅞	101½	99⅜	101⅜	99¾	101⅜	99⅜	101⅜
W	12	101⅞	102½	100¼	101	102	102½	100½	100⅞	101¾	102⅜	100⅜	100¾	102	102⅜	100½	100⅞
T	13	100⅞	102	100⅝	101⅝	101⅜	102	100¾	101⅝	101	102	100¾	101¾	101¼	101⅞	100¾	101⅝
F	14	100	101⅛	99⅞	100½	100	101¼	99½	100⅜	101⅛	101¼	101⅛	100½	100½	101⅛	99⅞	100⅜
S	15	99¾	100⅝	99⅝	100¼	100	100¾	99¾	100⅜	99¾	100⅝	99¾	100⅜	100	100⅝	99⅞	100¼
M	17	100⅜	101¼	100⅜	100¾	100⅝	101⅜	100⅝	100⅞	100½	101¼	100½	100⅞	100⅝	101⅜	100⅝	101
T	18	100¾	100¾	99¾	100	100⅝	100⅞	99⅞	99⅞	100½	100⅞	99¾	99⅞	100¾	100¾	99¾	99⅞
W	19	99¾	100⅝	99⅜	99⅞	99⅞	100⅝	99⅜	99⅞	99¾	100⅝	99½	99⅞	99⅞	100⅝	99⅜	99⅞
T	20	99⅞	100⅝	99¾	100⅛	99⅞	100½	99⅞	100⅛	100	100⅝	99⅞	100⅛	100	100½	100	100⅛
F	21	100¼	100⅞	100⅛	100⅞	100⅜	100¾	100¼	100¾	100⅜	100⅞	100¼	100⅞	100¼	100⅞	100¼	100¾
S	22	101	101⅛	100	100	101	101¼	100⅛	100⅛	101	101⅛	100⅛	100⅛	100⅞	101¼	100¼	100⅛
M	24	100	100⅛	99½	99⅝	100	100¼	99⅝	99⅝	99⅞	100⅛	99½	99⅝	100	100⅛	99½	99⅝
T	25	99½	100⅛	99⅜	99⅞	99½	100⅛	99½	99⅞	99⅞	100⅛	99⅜	99⅞	99⅞	100¼	99½	99⅞
W	26	100	100¼	99⅜	99½	100¼	100¼	99½	99⅞	100	100⅜	99½	99½	100⅛	100¼	99½	99⅝
T	27	99½	99½	96¼	96½	99⅝	99⅝	96⅜	96⅜	99½	99½	96¼	96¼	99½	99½	96⅜	96⅜
F	28	95¾	96⅝	93⅜	94	96¼	96⅝	93½	94⅛	95½	96½	93¼	94¼	96⅛	96⅝	93½	94⅛
S	29	94½	95⅜	92⅞	94¼	94⅜	95½	93	94¼	94⅞	95⅜	93	94¼	94⅝	95⅜	93	94⅛
M	31	94⅝	94¾	93	94⅝	95	95	93¼	94⅝	94½	94⅞	93¾	94⅛	94¾	94⅞	93¼	94¾

THE PHILOSOPHY OF SPECULATION.

In Bradford and other oil region towns or cities, the market is the theme of which the people never grow tired. Many are unconscious of the happenings in the great world outside, while keenly alive to every change within oildom's domain. They are careless of the drift of the world's thought, but careful concerning that of the crude fractions. A writer in the North American Review of July, 1882, in an article headed "Hydraulic Pressure in Wall Street," makes an honest effort to tell how the operators "work the market" at the centre, where the commercial currents of the nation ebb and flow. When the manipulator has ceased to be a power in speculative circles, and antiquarians are searching for the remains of departed Standard magnates, well defined rules may be laid down for beating the market. The following article contains much of value to the oilman who invests in oil certificates, and is given on that account a space in the AGE:

"The popular superstition concerning Wall street is that the great speculators control speculation. They are supposed to make and unmake prices at their pleasure. When they determine the market shall rise it rises. When they determine it shall go down, it goes down; and in the hands of these financial giants the public is helpless. Possibly ninety-nine men out of a hundred who think of the matter at all cherish this theory of the movement of speculation. To be true, it would require that the half a dozen men recognized as great operators should hold in their hands all the elements that go to make up speculation. They should be able to give or withhold from us bountiful harvests; to blast the grain-fields of Europe when we have a large surplus to sell; to give us mild or severe winters, floods or drought; to call up the devouring swarms of grasshoppers in the West, as Moses called the plague of locusts upon Egypt; to increase or diminish the stream of immigration pouring into the country; to make commerce and manufactures flourish or wither as they may will it. These are the elements that enter into speculation. It is these which make and unmake prices. None know this better than the great operators. They know how narrow are the limits of their power over the great movements of the speculative tides recorded in the figures on the stock tape; and the millions they have rolled up have been acquired by the success with which they have timed their schemes to their ebb and flow.

It is an axiom of speculation that you cannot bull stocks and corn at the same time. What enhances the price of corn diminishes the value of stocks. Good crops make high prices; poor crops make low ones. While wheat and corn are rising in price, the prices of stocks tend downward. In the grasshopper years, when wheat was two dollars per bushel, stocks of certain railroads, now quoted at one hundred and twelve and one hundred and thirty dollars, were selling at twelve and forty-five dollars. From this cause it comes that the "crop question" is of such transcendent importance in Wall street. It begins to be discussed with the plowing of the ground. The information then sought is the acreage returns, and how they compare with those of the year before. Large immigration last year means an increase in the acreage this year by the occupancy of previously waste ground. The weather report is anxiously scanned as the plant grows. A special weather report from the Signal Office is daily distributed in Wall street. First comes the great crop of winter wheat, harvested from the middle of June into the first part of July; then the spring-sown wheat, coming in August and September, and yet later, the harvesting of the corn crop; while in the southwest, the cotton crop is picked from summer till fall, the picking moving northward with the season. The progress of the crops in Europe has been meantime watched with scarcely less interest, for there we must market our surplus. Short crops abroad and bountiful ones at home give the farmers a ready market for their products, the railroads full employment in carrying them, the stockholders fat dividends; and fat dividends make high prices in the Stock Exchange.

"It is no time to buy stocks when iron is falling," is the saying of one of the greatest stock operators this country ever saw; and there is another one to the same effect: "You may safely buy stocks when the price of iron is rising." The iron market is the sure barometer of the industrial situation. It embraces the whole field of industry in this age. The degree of activity in real estate and the building trade may be approximated by the fluctuations in the price of nails. While the basis of our wealth is what grows out of the ground, the present state of trade is indicated by the demand for iron. If it be falling off, adverse causes are at work which will surely make themselves felt on the stock market. If the demand be growing, industry is receiving a new impetus, enterprise is awake, new railroads

are planning, old ones are extending, commerce is enlarging, the people are making money, and stocks will rise with the widened demand for investment securities. To keep thoroughly informed of the agricultural and industrial condition of the country, the few great operators who do most to give direction to the currents of speculation maintain an army of correspondents. They are keen and close students always. Nowhere is timely information of more value than in Wall street. Nowhere else may so high a price be obtained for it. Time is an all-important element in scientific stock speculation; therefore the great operator has to be always on the watch. He may see clearly that in, say, three or four months there will be a turn in the tide then flowing; but, in the meantime, the adverse current may carry his schemes to wreck. Time is everything; for there is no knowing what a day may bring forth. The operator who is working the market to sell stocks, which requires a rising one for success, has to remember that the chapter of accidents is in favor of his opponents—the bears.

As the tides of speculation ebb and flow according to the industrial conditions of the country, great schemes of stock speculation are always adjusted to them as nearly as the operator who is carrying them through can do it. This applies equally to the man who is a stock operator pure and simple, and to the other who is not only a stock operator but a creator of stocks also—a security manufacturer, as he might be called. He is not different from the merchant or manufacturer, who gets goods at the lowest price possible and sells them at the best he can obtain. Both the stock operator and the merchant may miscalculate the public demand or the public liking, or they may get belated, and find that they have laid up a stock of goods which cannot be sold profitably. As the stock operator sells for a fall as well as for a rise, he is exposed to error there. Looking over the general situation, he may judge that the market must decline. He goes heavily "short" of it, and discovers that he has miscalculated the strength of his forces at work upon it, and prices rise in spite of his most strenuous efforts to depress them. He must then reconsider the situation, and determine what he shall do in view of his own resources and the strength of the forces against him. Great operators vividly realize the unpleasantness of being either "long" or "short" of the market when the public temper is against them. None ever gets where he has to struggle against the current unless by accident or miscalculation. With vast and comprehensive schemes to carry through, extending over long periods in their operation, and involving millions of money, there is nothing to do but to struggle against the adverse tide as best he may. Whatever his schemes may be, he knows that the most he can do is but to retard or accelerate the general movement. To the constant efforts of operators to do this, as their various interests dictate, is mainly due those minor fluctuations of prices in the Stock Exchange which are like the waves on the surface of the ocean currents, and make or mar the fortunes of the swarms of small-fry speculators.

Of the mass of persons—not professionals—who speculate in Wall street, about ninety per cent. buy stocks for a rise, and only the other ten per cent. both buy and sell—in technical language, go long and short. The public at large knows nothing of selling for a fall. It is, therefore, always on the bull side of the market when in the market at all; and, as a consequence, this is the popular side. The prophet who proclaims his belief that prices are too high and must fall finds he is prophesying unwelcome things. When prices are falling, the public begins to desert Wall street, which has no more interest for people who only speculate the other way. They buy when prices are rising, and buy most freely at the top—when the great operators, who have bought their stocks months before at low prices sell out. By accumulating large lines of stock, and by their brokers using the arts of the auction-room in making quotations, prices are carried up; but if the public refuse to come in and assist by their purchases the movement is a failure, which means more or less heavy losses to the men engaged in it. They discover that they have been lifting prices by buying stocks which no one will take off their hands. Wall street was lately treated to a most conspicuous example of this. The greatest wealth and most acute talent of the country were enlisted in an effort to raise prices. They were raised by sheer force of money, the brokers of the chief operators offering to buy and buying all that was offered of certain leading stocks, each day at a higher price than on the day preceding. But it was a frightfully costly experiment to the men who did it. They had miscalculated the temper of the public. People would not buy, however much prices were advanced. The load became too heavy for the shoulders even of the financial giants. They suddenly stopped buying, and the whole artificial structure of prices which had been raised on

their purchases fell with a ruinous crash. The temper of the public had been growing colder and more distrustful since July, and that now famous "pegging" movement was ineffectual to change it. This was a case where some of the greatest stock operators of the age were completely mistaken in their reading of the speculative situation and state of the public mind.

The course of prices on the stock exchange was downward from the fall of 1873 to 1877, owing to the great panic and a succession of poor crops. From 1878 to July of last year they moved upward, under the influence of three years of bountiful harvests here and poor ones abroad, each crop being larger than the preceding one and giving a correspondingly increasing force to the influences making for speculation. In the end came a wild inflation of prices. Good securities were carried up to figures far above their real value; worthless stocks found buyers by the score; floods of new securities came upon the market and were eagerly snapped up; everybody had money to buy; seats in the Stock Exchange rose to thirty-two thousand dollars bid; and Wall street seemed intoxicated with prosperity. Nothing was listened to but the phenomenal growth of the country. To assert that prices were extravagantly high was stigmatized as want of patriotism. "Have you no confidence in your country?" was the customary reply. "The people are mad!" exclaimed one great operator, amazed at the extravagant prices at which buyers were eagerly contesting with each other for stocks. In the midst of this wild rage for sudden wealth, the nation was shocked to its center by the assassination of the President. Sad as was the event, it injured no material interest of the country, but it effected a complete change in the temper of the people. A vague feeling of distrust and insecurity began to spread. Wall street, as usual, was the first to feel the change. Whether it be from confidence to distrust, or from depression to hope, a change in the public temper is felt earliest there, for into speculation there enters a large element distinctly sentimental.

Facts which no one would believe or listen to before were now heard in silent acquiescence. People saw, as if it were a revelation, that the length and severity of the previous winter had inflicted enormous damage on the railroads; that the spring floods which accompanied the melting of the vast areas of snow had been even more destructive; that a drought was then scorching up great sections of country which had previously escaped damage. In addition, the great trunk lines of railroad were engaged in a ruinous war of freight rates. Speculation began to lose strength. The first blow fell upon the bond market. While stocks still continued active, new issues of bonds could find no purchasers. The crop of new railroad schemes growing up like mushrooms had a sudden check, for no one would subscribe for the bonds to build them. Railroad companies which were doing a thriving business on extensions discovered that the bonds to pay for them remained unsold in the hands of their bankers; and the managers of some new enterprises, who were not ready then to put their bonds on the market, have not dared to put them there yet. The bond market, in fact, completely "played out," which brought in its train the downfall of numerous flourishing railroad concerns, which had been paying dividends and making a fictitious show of prosperity on the sales of continuous issues of these securities.

From that time to this prices of stocks have been on the downward course, and the speculative and investing public have so completely withdrawn from the market that, for months past, the large commission houses, which depend upon this class of custom, have scarcely paid running expenses. Nevertheless, the decline has been stubbornly resisted, and because of this resistance, and the many efforts made to arrest it, the shrinkage of prices has been spread over a much longer time than would otherwise have been the case. The assassination of President Garfield came at a time when the greatest stock operator of this or, perhaps, any other day, was loaded up with an enormous line of certain stocks. Three or four months more of such a market as Guiteau's bullet shattered would have enabled him to sell out his holdings. The street and the public would have had every share he chose to sell. From various causes he had been unable to market his holdings at the time he had calculated upon doing so, and the assassination changed the whole complexion of things. He was left to struggle with the adverse currents of a falling market, and the history of Wall street speculation since that event has been, speaking broadly, the history of the efforts of a great operator of vast means, indefatigable energy, infinite resource, and unequaled talent in his line to profitably market a great load of stock, which the public has shown increasing disinclination to take off his hands. Twice in this period he has been driven close to the wall. On one occasion he was saved only because the men who were

pressing him became frightened at the near prospect of his downfall, which they saw must precipitate a panic in which all would suffer. They drew back, and the respite was sufficient for a man of his genius to extricate himself. For a time he seemed to have turned the tables on his opponents, and some of them he did punish badly; but it was hopeless. Neither immense wealth nor the highest talent could create a bull market when the public, demoralized and disheartened by losses, refused to support it; and another and worse tumble of prices followed the well-known "pegging" campaign.

If a rational consideration of the tides of speculation shows how much they are due to the public at large, and how much less to the efforts of the half dozen men recognized as the great operators, the assertion will scarcely be challenged that the indiscriminate denunciation of the ups and downs of prices as being the effect of "Wall street tricks" is both unreasonable and untrue. When times are prosperous people flock to the stock market, bent on buying everything offered; they do buy; they buy with their eyes persistently shut to every evidence of the badness of the bargain they are making; and this goes on until something comes which compels them to see what they had refused to see before. Then begins the general selling under which the market steadily declines; and when the fall has been long and severe, which it is sure to be if the previous inflation of prices has been correspondingly excessive, then comes the moralizing and preaching about "Wall street tricks" and the wicked ways of the speculators.

This being said, it remains to point out certain trickery practiced in the buying and selling of securities of which the public has a just right to complain. Its correct title is corporate fraud. Beside this, the little tricks peculiar to the Stock Exchange, which generally take the form of catching those who have "sold short," are not worth serious consideration, for they affect only a limited number, and mainly, the regular professionals. But the frauds of directors of corporations are aimed at the investing public, and bring heavy loss and injury to hundreds and thousands. Their effects are most manifest on the Stock Exchange, simply because that is the common market for securities, and hence these scandalous deceptions and flagrant breaches of trust are indiscriminately denounced as "Wall street tricks." They are frauds planned and executed in the companies' offices, and would be done if Wall street did not exist and securities were marketed the same as potatoes. These frauds are simply the giving of fictitious values to securities by misrepresentation of facts and suppression of truth, and the destruction of good properties for the profit of those who have obtained control of them."

MACKSBURG CORRESPONDENCE.

EDITORS AGE:

As the future possibilities of the Macksburg field have recently been attracting the attention of all wide awake oil men, and the reports and rumors that have been heralded from that ill-favored country have caused panicky pikers and speculators to quake with fear, the writer of this, accompanied by a prominent producer, invaded the country on a tour of inspection.

The first impression (as you ask for an impression of the field) that struck us on our arrival at Macksburg was, that there was something wanting, and with the writer, that something can best be described as a sort of want-to-get-out-of-the-country feeling that bordered close on homesickness. As we did not desire to tarry long we immediately started in pursuit of knowledge, and after searching diligently we at last found some of the natives and roustabouts congregated about the few scattered derricks, and without delay proceeded to open our inquisitive batteries on them, and gained the following information:

The present oleaginous fever was caught by the drilling of the George Rice well, in August, 1879, which struck the lower producing rock at a depth of 1523 feet, from which it produced, from the time of its completion up to the date of its first torpedo, from 1 to 2 barrels per day. About eighteen months ago this well was treated to 50 pounds of Hercules powder, and responded to the treatment with a production of about 4 barrels per day. Last November it was treated to 150 pounds of the same emetic, and registered about 18 barrels for its initial production, but has since declined to its old production of about 2 barrels.

Since the date of the completion of the Rice well, 23 wells have been drilled to the "1500 foot sand," as it is called, with a daily production varying from 100 to 150 barrels, according to the torpedos and handling of the wells. The tide elevation of Macksburg is seven hundred and ten feet, consequently the producing rock is from 700 to 800 feet below tide level, and as regards the character of this rock, the drill has thus far demonstrated the fact that it is exceedingly thin, being but 12 to 14 feet in thickness, and that it is fine and entirely devoid of pebble. The oil is found in the top of the sand, and practical men, who have had experience there, claim there is but 4 to 6 feet of sand that may be called good. Another fact that will greatly retard the development of the field, is that the cost of drilling is from 40 to 50 cents more per foot than it is in the upper country. This is owing to the great amount of casing required, and the scarcity of lumber. The following record of one of the wells producing from the "1500 foot sand," will clearly illustrate the character of the territory in which work is being prosecuted:

Cased at 528 feet with 5⅝ casing.
Cased at 1075 feet with 4¼ casing.

Struck sand at 1430 $\frac{5}{12}$ feet.
Bottom sand at 1442 $\frac{5}{12}$ feet.
Bottom of well 1454 feet.

A glance at these figures will show that there is a total of 1603 feet of casing in this well, which exceeds the depth of the well by 149 feet. Much difficulty is experienced in drilling, on account of a soft strata of rock encountered at a depth of about 250 feet on the flats, and the salt water sand found at a depth of 900 feet, and which is nearly 200 feet in thickness. Gas is found in sufficient quantity in the oil-bearing rock to permit the wells to emit their production freely and in a manner that denotes strength, a fact that leads *us* to believe that they are producing all there is in them, notwithstanding the fact that those who are firm believers in the greatness of the field render all manner of apologies and excuses for the rapid decline in the production of new wells, claiming that they were not properly handled, etc., and that the field is yet in its infancy, but to the man up a tree it has the appearance of an aged infant. The Garvey well, on the Perkins farm, about a half mile east of Macksburg, is claimed to be a trifle better well than the average of the field. At the time of our visit it was about a week old, and was said to be doing about 15 barrels. It is located on the eastern edge of developments, and leads many to believe that the belt may run east and west; this theory and that of the old 45° line, however, is about evenly divided, The reputed showing of the Mills & Mullin and Laing wells, if true, extends the belt to the northeast a distance of a mile and a half to two miles. From records of wells obtained, we fail to find any defined dip to the rock, the dips being of a local nature and varying greatly in short distances. The surface is very much broken, and to a person familiar with the hemlock-clad hills of Warren and Forest counties, the country looks barren and dreary. It is possible that the producing territory may be extended over quite a large area, but judging from present developments it will be irregular and uncertain. There are now 8 drilling wells, and with the completion of these wells it may be possible to form a more correct opinion of the field, but unless something of an entirely better nature is found, we do not hesitate to make the statement that any fears caused by the expectation or probability of an immediate large production from Macksburg are premature and entirely without just grounds. The oil from this field is about 42° gravity. There is a pipe line for the collection of the oil, and it is transferred in tank cars to the refineries at Marietta and Cleveland. The western edge of the field is practically condemned by a series of dry holes extending on nearly a due north and south line, consequently any extension to the southwest could not be otherwise than an exceedingly narrow streak, and as yet, none of the handful of operators there seem to desire to venture a great ways beyond defined limits.

GEORGE H. TORREY.

MARCH PRODUCTION REPORT.

Reports were received showing the amount of stocks at 6,329 Bradford wells March 1st. The parties who owned these wells completed 28 during March and reported stocks at 6,357 for April 1st. The average stocks per well and total amount at these wells is tabulated as follows:

Time.	No. Wells.	Gross Stocks.	Average per Well.
March 1, 1884	6,329	441,334	69.7
April 1, 1884	6,357	425,874	67.0
Difference	28	15,460	2.7

The number of wells in the Bradford district connected with the pipe lines April 1st, is estimated at 13,052. The wells heard from show an average decrease in stocks of 2.7 barrels per well. Hence for the district there was a total decrease of 35,240 barrels, or an average daily decrease of 1,137 barrels. The average daily Bradford runs by both lines in March were 33,049. Subtracting the decrease in stocks from the pipe line runs, a fair estimate on Bradford's daily average production for March would be 31,912 barrels. Bradford's February production was estimated at 32,378. The March figures show a decrease of 466 barrels.

THE ALLEGANY FIELD.

Reports of stocks at wells received from the Allegany field are tabulated as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
March 1. 1884	1,128	66,163	58.7
April 1, 1884	1,133	65,158	57.5
Difference	5	1,005	1.2

With 3,454 wells in the field March 1st and 3,521 April 1st, the above averages furnish the following result:

Time.	No. Wells.	Average per Well.	Gross Stocks.
March 1, 1884	3,454	58.7	202,750
April 1, 1884	3,521	57.5	202,457
Difference	67	1.2	293

According to the above, the stocks at wells in the Allegany field decreased 293 during March, a daily average of nine barrels. The average daily pipe line runs by both lines were 11,777 barrels. Subtracting the decrease in stocks from the runs, makes the March daily average production 11,768 barrels. These figures show an increase of 161 barrels over the February yield.

Reports from groups in sections of Warren and Forest and the Lower Country, give the following averages:

Field.	No. Wells. Mar. 1.	No. Wells. Apr. 1.	Average per Well. Mar. 1.	Average per Well Apr. 1.
Clarendon & Tiona	102	113	64	57
Cherry Grove	44	45	118	112
Cooper District	108	124	229	211
Lower Country	74	75	47	48

Reports from all sections except the Lower Country show a decrease of stocks.

Accepting the outside runs as representing the production, an estimate on the yield of the region for the months of February and March is tabulated as follows:

Field.	February. Barrels.	March. Barrels.
Allegany	11,607	11,768
Bradford	32,378	31,912
Outside runs	18,561	19,764
Total	62,546	63,444
Increase	898 barrels.	

THE PETROLEUM AGE.

Vol. III. BRADFORD, PA., MAY, 1884. No. 4.

FIRST USE OF NATURAL GAS IN IRON MANUFACTURE.

It is said that natural gas was first used in Germany by way of manipulating iron, but the fact is indisputable that the first attempt in that direction in this country was made at the Siberian iron works, Leechburg, Armstrong county, in 1874. Along somewhere in the sixties the good people of that town, slightly smitten with the prevailing fever, joined together and formed a company for the purpose of drilling for oil on a site just opposite on the Kiskiminetas. The work progressed slowly but surely, interspersed with various mishaps and successes, until at last the stockholders realized the fact that none of the greasy fluid was to be obtained in that locality. The drilling was abandoned, but the hole remained a memento of lost money and labor in vain; but after all it wasn't dry like many of its contemporaries, for salt water bubbled at its mouth and flowed into the river near by. On the fourth of July, 1871, when the patriotism of the region was up to fever heat, an unearthly noise was heard in the direction of the deserted well. The startled citizens hurried to the spot to find that an immense volume of gas had suddenly burst from its prison below and was blowing out with a roar that could be heard at a considerable distance. For several years the gas continued to expend its force, until the march of improvement brought a rolling mill to Leechburg. It was then that Mr. William Rodgers, senior member of the firm of Rodgers & Birchfield, conceived the idea of using the gas under the several steam boilers of the establishment. Before giving away his plan to the public he adroitly managed to buy out his fellow stockholders in the oil venture for a mere song, and then proceeded to carry out the remaining details. To make assurance doubly sure he leased the site of the well for a long term at a paltry figure per year. A great difficulty was yet to be encountered, but "Billy" Rodgers, as he was affectionately termed by his well-wishers, proved himself equal to the occasion. A river lay between his fuel and his rolling mill. To be sure, a bridge spanned the stream, and it could easily support the conducting pipe, but its officials were hostile to the project through fear of the gas taking fire and endangering the structure. The president of the bridge company was opposed to the pipe laying, so a flank movement had to be made. The day when that official had taken the train for Pittsburgh, a force of mill men placed the pipe on the forbidden bridge, made the proper connections, and introduced natural gas into a rolling mill, the first event of the kind in the history of our country.

The next day a faint attempt was made by the bridge people to remove the objectionable pipe. With promptness worthy an adept in the art of war, Mill Manager John Cole quelled the movement without serious results; in fact, the only stirring episode of this bloodless victory was the capture of a pair of gas tongs, which were promptly thrown into the river.

The introduction of gas into the boiler furnaces was the great aim originally intended. It is probably true that no thought of using it for puddling or heating purposes entered the mind of Mr. Rodgers at that time, but experiments naturally followed. A heating furnace supplied by the new fuel showed wonderful results. Sheet iron came out exceedingly clear, and improved in quality. The puddling experiments astonished everybody. It was found that a sheet of gas ignited in the grate burned at the desired point, and created that intense heat so necessary for puddling purposes. No change was made in any of the furnaces, and those workmen who assisted in introducing the gas there wonder at the reports of difficulties attending its use in Pittsburgh mills. It is doubtful whether the modern gas furnace excels those of Leechburg at the point mentioned. After the new fuel had been conveyed to every point where heat was necessary, and the mill had been in full operation on the improved plan for some time, Secretary Weeks, of the Western iron association, visited the place and experimented on a puddling furnace with gratifying results. The fame of the first mill to use natural gas in the manufacture of iron was nearly world-wide. Strangers from every iron producing locality called to see the operation. The iron men of Pittsburgh went up on trains and speculated on the prospective

wealth of a firm whose fuel cost next to nothing. In short, the mill was considered a mint, and the credit of its owners was unlimited. But a heavy debt and numerous leaks which cheap fuel could not overcome, shut the mill down in 1875, and after laying idle for the next two years it passed into the hands which now operate it.

McKEAN COUNTY IN 1832.

In the light of the developments of the past seven years, the following sketch of McKean county in 1832, taken from Gordon's Gazetteer of that date, is interesting:

"Lying in the great secondary formation of the West, the county partakes of those characteristics in surface and strata, which mark the western part of the state. It is everywhere hilly along the streams, but nowhere mountainous, and abounds with coal, iron and salt. The first is found in every township, and works have been erected for manufacturing salt at the small village of Emporium, on a branch of the Sinnemahoning creek. * * * * The only places that can claim the slightest pretensions to be considered as towns, are Smethport, Emporium and Ceres; neither of the two last contain 6 houses. The co. contains 922,880 acres, and 1438 inhabitants, about 6410 acres to an inhabitant. It is consequently little else than an uninhabited wilderness. In 1810 there were within the bounds of the county 142; in 1820, 728. Of the 1438 inhabitants in 1830, 764 were white males, 674 white females. There were among these, 2 deaf and dumb, and 2 blind, but not an alien nor a slave in the county. From a county thus populated, and the inhabitants scattered abroad on the soil, little provision can be expected for moral wants. There is not a church in the county; yet an academey endowed with considerable estate by John Keating, Esq., and others, and with the further sum of 2000 dollars by the state, was incorporated in the town of Smethfield, by act 19th Jan., 1829. There are in this town also a very substantial and commodious brick court house and offices, a stone prison, &c. There is also a newspaper published in the town.

The county even in its natural condition yielding good pasturage, there are also considerable quantities of live stock exported, but few other commodities save lumber, which seeks the western market at Pittsburg and the towns on the Ohio, by the Allegheny river, and the eastern by the Sinnemahoning creek and the West Branch of the Susquehannah.

The average quality of the lands is second rate; on the margin of the water courses, they are flats of excellent quality, having a rich, alluvial soil. When improved, these sell from 6 to 12 dollars the acre, and unimproved lands may be had for one or two dollars the acre. By the assessment of 1829, the seated lands were valued at $39,340, unseated $490,740; personal estate at $32,707.25. The rate of levy was 5 mills on the dollar. The county paid into the state treasury in 1831, for tax on writs $85; for duties on dealers in foreign merchandise, $17.26; total, $102.26."

THE PETROLEUM GAS MONOPOLY.

Illuminating gas can be manufactured much more cheaply from petroleum than from either coal or water. In the city of Brooklyn, the company that adopted and now controls this process, enjoys a complete monopoly of the gas manufacture. It secured a charter from the city, and by a short but vigorous competitive warfare, caused nearly all its rivals to entirely cease manufacturing gas, and compelled them to buy their gas of it. The coal gas companies speedily came to terms and succumbed to the demands of the petroleum gas monopoly. But the old companies have not suffered much by the change. Their shares are as high, and in some cases higher, than before. Of course, the stockholders in these companies are not murmuring very loudly against the new company, but the consumers of gas are the ones that feel the effect of the destruction of legitimate competition.

It is now proposed to introduce the new process into New York on a very large scale. It will undoubtedly be of great benefit to the city, if it only can be kept from becoming a monopoly. New York now pays $2.25 per thousand cubic feet for the gas made from coal, an exorbitant figure when compared with Boston, several hundred miles further from the coal fields, which city is supplied at $1.80 per thousand. In Boston, too, a single company is in undisturbed possession of the right to supply the city with gas light. The petroleum gas company that proposes to light New York is prohibited in its charter from charging more than $1.75 per thousand cubic feet for the gas it is about to manufacture. But this figure, though more reasonable than the price demanded by the coal gas companies, affords a larger margin of profit than the people should be made to pay.

In Chicago a water gas company supplies the city with 500,000 cubic feet daily, at a cost of $1.25 per thousand. This company is also pro-

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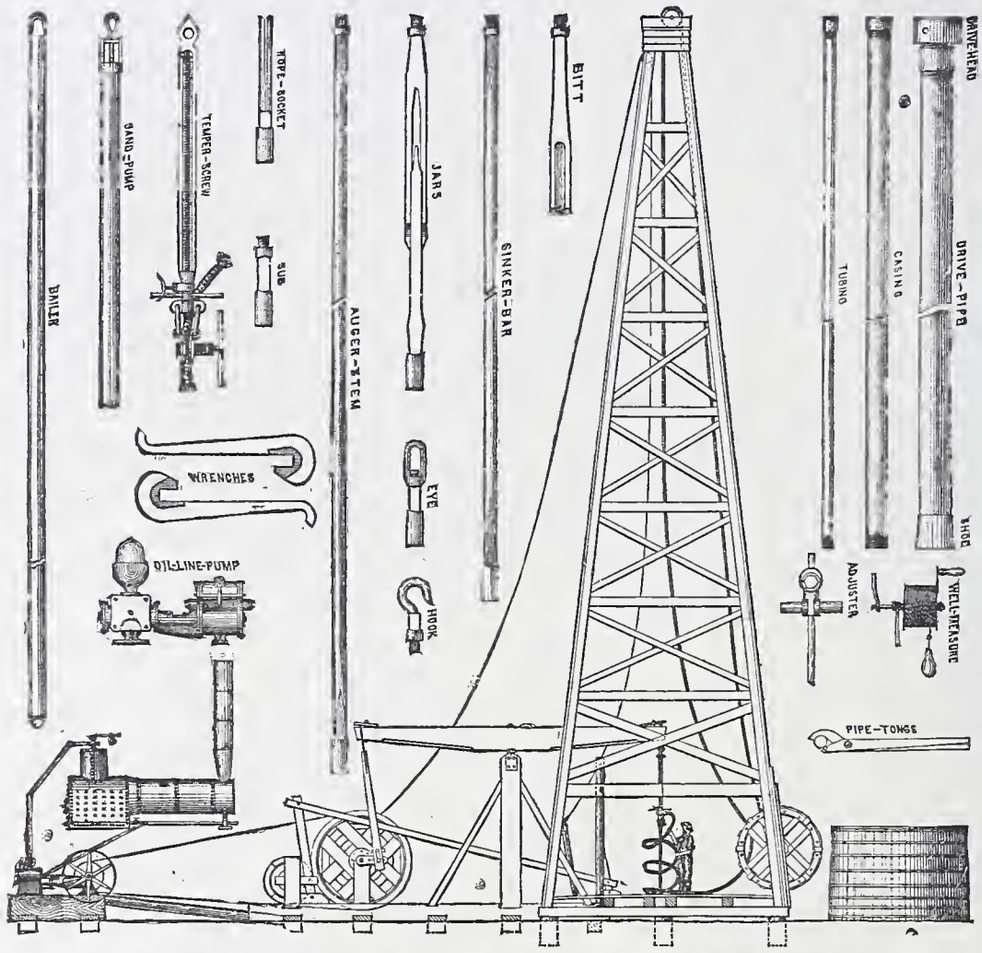

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hibited from charging above $1.75 for its product, but it voluntarily reduced the price, and is making contracts for five years at the rate mentioned above. The old coal gas companies attempted to fight the water gas company, and came down with their rates from $2.50 to $1.00 per thousand, but the people were sensible enough not to bite very greedily at the gilded bait and thus give them an opportunity of advancing the price when all competition had been crushed out. The gas supplied the city of Chicago by the water gas company is of twenty-three candle power, while Boston's supply is of but eighteen candle power.

The Chicago company also supplies the city of Newburgh. There only 90,000 cubic feet is used daily, but it is furnished consumers at $1.75 per thousand, and at this figure the company is making the interest on its bonds and paying fair dividends to its shareholders.

REPORT OF COMMITTEE UPON THE PIPE LINE TRANSFER.

At a meeting of the Conference of Oil Exchanges, held at Oil City, on March 10th, a full account of which will be found in the March number of the AGE, Messrs John J. Carter, N. F. Hilton and Joseph Seep were selected out of the committee of seven to investigate the proposed transfer of the United Pipe Lines to the National Transit Company, and report thereupon. In accordance with the provisions of the resolutions passed upon that occasion, President C. L. Wheeler has caused the report of the committee to be published in pamphlet form for distribution among the conference exchanges.

In presenting their report to the public, the committee state "that two lines of inquiry presented themselves for consideration—first the commercial, and second the legal—and that they examined them in their natural order, by submitting a series of carefully prepared questions to the officers of the United Pipe Lines and National Transit Company."

The results of the committee's labor are presented below, with a summary of tankage of the National Transit Company that is made directly available for the storage of petroleum by the merging of the interests of the two corporations:

COMMERCIAL—UNITED PIPE LINES.

First—Is the National Transit Company a common carrier, in the same sense as the United Pipe Lines?

By Vandergrift—The National Transit Company, United Pipe Lines Division, will continue to be a common carrier precisely as the United Pipe Lines have heretofore been.

Second—Does the oil now in the custody of the National Transit Company belong to it or to the patrons of the line?

By Vandergrift—The stock in the custody of the National Transit Company's lines belong to the patrons exactly as the stock of the United Pipe Lines belong to its patrons.

Third—Has the oil now in the custody of the National Transit Company been once accounted a delivery by the United Pipe Lines?

By Vandergrift—It has.

Fourth—What change, if any, will the National Transit Company make in the reception of oil at the wells, when, or after the United Lines are transferred to it?

By Vandergrift—None, whatever.

Fifth—Will there be any change in the contracts for private iron tankage that is now under contract with the United Pipe Lines?

By Vandergrift—New contracts, *of the same form and conditions*, will be made with the National Transit Company.

Sixth—Will the transfer contemplated create any change in the transportation and storage rates, or in the manner and time of collecting same?

By Vandergrift—No.

Seventh—Will the consolidation of the United Pipe Lines with the National Transit Company consolidate the oil now held by both companies, thereby adding any oil now held by the National Transit Company to that heretofore held as Oil Region stocks?

By Vandergrift—Yes; it will add from one million to fifteen hundred thousand barrels.

Eighth—Will the National Transit Company regard itself obligated to deliver oil at the seaboard, on presentation of the new form of certificate, by fixing an additional amount for trunk line transportation?

By Vandergrift—We are not authorized to answer for the National Transit Company's trunk line, but only for the United Pipe Lines Division.

Ninth—How will the additional amount be determined?

By the Officers of the United Pipe Lines—[It was decided to send this question to the officers of the National Transit Company for answer.]

Tenth—How much more tankage will there be in the possession of the new line by the transfer?

By Scheide—About twenty-two hundred thousand barrels.

Eleventh—Where are the tanks located by the addition of which the increase will be made?

By Scheide—Located along the trunk lines of the National Transit Company, and at New York and Philadelphia.

Twelfth—Are any tanks situated near refineries so as to be endangered by fire?

By Scheide—Twenty-one of the tanks on the trunk lines are situated near refineries, but not (so we think after a careful examination) endangered thereby.

Thirteenth—Do the United Pipe Lines deliver oil to any point or points where your rate of transportation is different than that mentioned in the present United Pipe Line certificates, viz., twenty cents per barrel?

By Vandergrift—No.

Fourteenth—Is the National Transit Company subject to all the provisions of the present pipe line laws of Pennsylvania?

By the Attorney of the United Pipe Lines—It is; for the National Transit Company is a Pennsylvania corporation.

Fifteenth—What additional powers and responsibilities are conveyed by the franchises of the National Transit Company over the powers and responsibilities of the present United Pipe Lines?

By the Attorney of the United Pipe Lines—We refer to the general corporation act of 1874, for the powers of the United Pipe Lines and subsequent acts governing the business. For the powers of the National Transit Company see act of April, 1870, incorporating the Pennsylvania Company. It is subject to the same regulations in its business as the United Pipe Lines.

Sixteenth—Will the holders of oil be subject to an assessment for any loss of oil while in transit, other than from fire or other unavoidable cause, as at present?

By Vandergrift—No.

Seventeenth—Will the trade be charged 50 cents per day or 41⅔ for odd days on certificates surrendered April 1st, in exchange?

By Campbell—Storage on all acceptances surrendered for exchange during the first ten days of April, 1884, will be charged at 41⅔ cents.

Eighteenth—If I present a certificate for exchange dated January 1st, for instance, with storage slip to February 15th, and the exchange is made April 5th, how or in what shape will you designate the accumulated storage in case I should not elect to pay the storage at the time of said transfer.

By Campbell—In the case named the new acceptance would be stamped "storage due on the acceptance from February 15th, 1884."

Nineteenth—Who are the officers and directors of the National Transit Company?

By Vandergrift—C. A. Griscom, president; B. Brewster, vice president; D. O'Day, general manager. Do not know the names of the directors.

COMMERCIAL—NATIONAL TRANSIT COMPANY.

First—Is the National Transit Company a common carrier in the same sense as the United Pipe Lines?

By Archbold—It is.

Second—To whom will the oil belong after the transfer of the United Pipe Lines to the National Transit Company, the patrons or the National Transit Company?

By Archbold—To the patrons. The National Transit Company will bear the same relation to the oil in stock that the United Pipe Lines bear to the oil now in their possession—custodians only.

Third—Will the stock now held by the National Transit Company, being pipeage paid, as we understand, ever be issued in the form of certificates?

By Archbold—There will be no issue of certificates for the oil in the National Transit Company on the first of April. The oil in the possession of said company, having the pipeage paid, will be the first oil shipped out of said company, and the certificates will not be increased on account thereof. The company will not issue certificates against that oil, but will use it up, by delivery out of the lines, at the earliest day possible.

Fourth—What change, if any, will the National Transit Company make in the method of receiving and delivering oil from and to the producers?

By O'Day—None, whatever; unless improvements should suggest themselves, when we would feel at liberty to adopt them. The National Transit Company will take no step backward.

Fifth—Does the National Transit Company contemplate any change in the form or duration of the contracts, for the private iron tankage on the line, different in any respect from that of the United Pipe Lines?

By O'Day—Not in the least. Our record in the past is the fairest guide for the future. The management of the National Transit Company's United Pipe Lines Division is to be in the hands of the old officers of the United Pipe Lines, and

is to be governed by them in the future. There will be no strangers to deal with. Enlarged facilities should insure equal or better service.

Sixth—Will the National Transit Company make any change in the rate of transportation or storage rates or the manner and time of collection?

By Archbold—None, so far as we now know; we assume all the contracts of the United Pipe Lines.

Seventh—How much oil is now held by the National Transit Company?

By O'Day—Nine hundred and forty-two thousand and sixty-three and thirty-six one-hundreth barrels March 1st, 1884.

Eighth—Will the National Transit Company regard itself obliged to deliver oil at the seaboard, or points intermediate, outside the points of delivery of the United Pipe Lines, as at present, on presentation of the new form of certificate, and paying the 20c per barrel pipeage, and in addition, the trunk line transportation charges?

By Archbold—The obligation of the company as a common carrier will govern that question. We have delivered oil, and are *now* delivering oil, as indicated; and, nothing now occurs to us why we should not continue so to do, if required and our capacity continued equal to the demand.

Ninth—How are the trunk line charges to be determined?

By Archbold—There are a number of railroads, with a large oil transportation equipment, which we cannot ignore; and which form a large factor in determining the rate of transportation to different points reached by our lines. The charges for transportation by our lines should be no higher than that charged by the railroads, for, if higher, the railroads would perform the service. Competition in this, as in other matters, will largely govern. Thus far a fair service has been rendered at a low figure.

Tenth—Many of the patrons of the United Pipe Lines are desirous of knowing the location, numbers and capacity of the tanks now owned by the National Transit Company, which are to be consolidated with those of the United Pipe Lines soon to be transferred. Will you furnish the committee with this information?

By O'Day—We will have a complete diagram of all those tanks made, which will furnish all the information asked for and more. We are satisfied the committee would have exercised no more care, in the selection of these tanks, than the officers of the United Pipe Lines did, before accepting them as part of the general storage capacity of the new company. We rejected a number of tanks not considered good risks.

Thirteenth—Do the National Transit Company deliver oil to any point or points, where the rate of transportation is different than that mentioned in the present United Pipe Line certificates, viz: Twenty cents per barrel?

By Archbold—Yes, we are delivering oil at a number of points and to different parties outside the points named.

Fourteenth—Is the National Transit Company subject to all the provisions of the present pipe line laws of Pennsylvania?

By Attorney Dodd—Most assuredly; we are a Pennsylvania corporation and subject to its laws, made and provided for the government of pipe lines.

Fifteenth—What additional powers and responsibilities are conveyed by the franchises of the National Transit Company over the powers and responsibilities of the present United Pipe Lines?

By Attorney Dodd—We refer to the general corporation act of 1874, for the powers of the United Pipe Lines, and subsequent acts governing the business. For the powers of the National Transit Company, see act of April, 1870, incorporating the Pennsylvania Company. It is subject to the same regulations in its business as the United Pipe Lines.

Sixteenth—Will the holders of oil be subject to an assessment for any loss of oil while in transit, in the National Transit Company, other than from fire and unavoidable causes, as at present in the United Pipe Lines?

By Archbold—No, we follow the well-known path of the United Pipe Lines.

Eighteenth—(Was not asked the National Transit Company.)

Nineteenth—Will you give the committee the names of the officers and directors of the National Transit Company?

By Archbold—C. A. Griscom, Philadelphia, President; Benjamin Brewster, New York, Vice President; Dan O'Day, Buffalo, General Manager; John Bushnell, New York, Comptroller; G. W. Colton, New York, Treasurer. Directors: H. M. Flagler, New York; J. A. Bostwick, New York; W. G. Warden, Philadelphia; J. D. Potts, Philadelphia; Benj. Brewster, New York; J. D. Archbold, New York City; C. A. Griscom, Philadelphia.

Twentieth—Is the National Transit Company now engaged, or has it been so engaged in refining or manufacturing oil?

By Archbold—No. Neither at this time or at any time in the past. The National Transit Company's entire business is transporting and storing crude petroleum.

Twenty-one—How long has the National Transit Company been engaged in the transportation and storage of crude petroleum?

By O'Day—About four years.

Twenty-two—Has the before-named company made the sworn statements required by law—the same as the statements made monthly by the United Pipe Lines?

By O'Day—It has, regularly; and it gives me pleasure to show the committee copies of those statements made by the National Transit Company, from time to time, as required by law, because I understand it was stated to your committee, while at Oil City, that application had been made, at the company's office for such statement, and none was produced, because none such had ever been made. The statement was made and sworn to, as provided by law, and will continue to be made. Statements exhibited.

Twenty-three—In making its report in the future, will the National Transit Company divide the same, viz.: Into the United Pipe Lines Division and the Trunk Lines Division, or make one comprehending both?

By D. O'Day—One complete report, embracing the business of the National Transit Company.

Twenty-fourth—What public reasons, if any, can you gentlemen assign for asking the patrons of the United Pipe Lines to transfer their business to the National Transit Company?

By D. O'Day—First, that the tankage of the National Transit Company might be made available in time of emergeney, if such should again arise.

Second, that a more uniform system of shipments, from the region, shall be maintained, and thus relieve the producing tanks regularly, and

Third, that the lines be permitted to work nearer their true capacity, instead of being pushed one day, week or month, and idle an equal length of time.

It is believed, had this transfer been effected years ago, less oil would have run to waste during the days of overproduction, nor would the necessity of "immediate shipment" have been resorted to that relief be given the overflowing tanks of the producers. To illustrate this point, everybody knows we were doing all in our power to build tankage to take care of production, and we were using all reasonable arguments with our shippers and refiners to take oil from the region; but because the law requires that we should be the custodians of our patrons' oil we could only dispose of it as fast as the oil was absolutely purchased and orders for shipment given. There was no way of transferring it without violating the law, or—by purchase and the refiners did not always choose to purchase beyond their necessities, so that tankage empty and otherwise within our reach, had to remain empty and unused. To obviate this difficulty constitutes a reason, and *a good one, too,* for the transfer contemplated.

The following memoranda was handed in by the Pipe Lines:

Storage or shrinkage due the United Pipe Lines acceptance or certificates, presented for exchange into the National Transit Company's obligations, within five months after date of issue, will not be collected at the time of such surrender, if the owners so desire; but the new acceptances or certificates, issued therefor, will be stamped with the date to which storage or shrinking has been paid.

LEGAL.

One—What are the powers of the National Transit Company?

First—The usual and essential powers of a corporation.

Second—The power to contract with any other party to construct any works, for transportation purposes, *which such other party may be authorized to construct.*

Third—To supply materials, labor and implements.

Fourth—To purchase, contract, maintain and conduct any such works, *as they may by law be authorized to do,* including also herein, lines for telegraphic communication, and to aid, co-operate and unite with any other company, person or firm in so doing.

Fifth—To make purchases and sales of or investments in the bonds and securities of other companies; to make advances of money and of credit to other companies and aid in like manner contractors and manufacturers.

Sixth—To receive and hold on deposit or as collateral or otherwise any estate or property, real or personal, including the notes, obligations and accounts of individuals and companies and the same to purchase, collect, adjust and settle and also to pledge, sell and dispose thereof.

Seventh—To endorse and guarantee bonds, contracts and leases.

Eighth—To merge or consolidate, or unite with the said company the property and franchises of any other company.

Ninth—To increase its capital stock *indefinitely*.

Tenth—To issue bonds and secure the same by mortgage, issue common and preferred stock and change its name.

Two—Can the National Transit Company, if it shall purchase and operate the property of the United Pipe Lines, be compelled to comply with the provisions of the act of May 22, 1878, while part of its receipts, shipments and stocks are in another State?

First—The 26th section of the first article of the old constitution, being one of the amendmendments of 1857, provides that

"The Legislature shall have the power to alter, revoke, or annul any charter of incorporation hereafter conferred by or under any general or special law, whenever, in their opinion, it may be injurious to the citizens of the commonwealth: in such manner, however, that no injustice shall be done to the corporation."

The act to incorporate the Overland Contract Company, alias The National Transit Company, having been passed subsequent to the adoption of this amendment, no question as to the power of the Legislature to alter it, can arise.

It is, therefore, unnecessary to inquire whether the pipe line act of 1878 would be an alteration of the charter of that company, or a mere exercise of the police power of the State, which the Legislature cannot abdicate. Fortified by a number of judicial decisions, not necessary to cite, we are satisfied it is the latter.

Be that as it may, however, no corporation, created since 1857, can claim superiority to legislative control, and should the National Transit Company engage in the transportation of oil, by pipe lines, it *must report*, agreeable to the provisions of the act of 1878, and *this*, NOTWITHSTANDING PART OF ITS BUSINESS MAY BE IN ANOTHER STATE.

Three—Do deposits of oil, or certificates, in the National Transit Company lose its or their identity and the company become responsible for such deposits the same as a bank?

The judicial decisions, so far, as well as the pipe line act of 1878, point to the doctrine that the ownership of oil delivered to a pipe company, for transportation, remains in him who so delivered it and his assigns or transferees, and, that being mingled with oils of other patrons of the company, in an undistinguishable mass, each party so delivering oil, is entitled to an aliquot part of the whole.

Four—To what extent, if any, do the laws relating to pipe lines enacted since the National Transit Company was incorporated, apply to and govern that company?

If the National Transit Company engage in the transportation of oil by pipe lines *it will thereby subject itself to the laws relating to that business, whether it be authorized to engage in such business or not, and whether it was incorporated before or after the passage of those laws*—PROVIDED it was incorporated since 1857.

Five—What liability is the said company, its officers, directors and stockholders under to the owners or holders of its certificates and credit balances, for the safe custody and delivery of same when required?

By the fifth section of the act of 7th April, 1870, it is declared that the directors of the Pennsylvania company shall be "*subject only to such liabilities as other shareholders are subject to, which liabilities are no more than for the payment to the company of the sums due or to become due on the shares held by them.*"

Notwithstanding this remarkable provision, however, the directors would be held responsible for their own gross negligence, willful misconduct or dishonesty. The National Transit Company will be subject to the same liabilities as the United Pipe Lines are.

Reviewing all the facts, and considering the answers made to the committee, by the officers of the United Pipe Lines and National Transit Company to be, generally full, and remarkably harmonious, bearing the impress of a common origin; and yet, so consistent with the legal interpretation of the rights, duties and responsibilities of all concerned; and, not forgetting the relations of producer, speculator and capitalist to these corporations, the committee have reached the following conclusion:

FIRST—That neither the producer, holder, shipper, speculator or capitalist lose any rights which they enjoyed under the United Pipe Lines.

SECOND—That the law governing pipe line companies, as in *the State* of Pennsylvania, made and provided, is as applicable to one as the other. Each is a common carrier, in its broadest sense, and must render service accordingly.

THIRD—That many good reasons do exist for believing it to be within the power of the National Transit Company to serve its patrons better than it was possible for the United Pipe Lines to serve theirs. Some of the reasons are:

One—More extended and increased capacity, both as to tankage and pipe lines, should insure better and more uniform service, at all times, precluding the possibility of a return to "immediate shipment" and kindred evils. *Two*—Larger capital and better credit of the National Transit Company should put the oil certificate on so favorable a financial basis, that, all concerned may be enabled to carry forward his particular branch of the oil business, with better assurance of financial success.

Having extended this inquiry further than originally designed, and delayed this report, as a consequence, beyond our expectations, we now, herewith, submit our conclusions with the evidence on which they are based, asking only a fair consideration for each.

In the mean time, we have the honor, dear sir, to subscribe ourselves,

Your Obedient Servants,

JNO. J. CARTER,
N. F. HILTON,
JOSEPH SEEP,

LIST OF TANKAGE OF NATIONAL TRANSIT COMPANY, AND CAPACITY.

TRUNK PIPE LINES.—SUMMARY.

DIVISION.	No of Tanks	Capacity. Bbls. of 42 gals. each.
New York Pipe Line—Western Section..706,754.77	22	
" " " " S.R.&B. Section..506,485.39	17	
	39	1,213,240.16
Pennsylvania Pipe Line	22	710,930.33
Cleveland Pipe Line	8	173,061.48
Pittsburgh Pipe Line	7	133,902.89
Buffalo and Rock City Pipe Line	5	150,948.27
Total	81	2,382,083.13

MR. CUTLAR SALMON, who lives a short distance from Stockton, California, is the fortunate possessor of an artesian well that supplies his household with gas as well as water. He put down a seven-inch hole 840 feet deep, where he struck a vein of excellent water. Desiring a larger supply, he proceeded to sink the well still deeper, using a four-inch drill. At 1250 feet he found more water, which rose inside his tubing 22 feet above the surface of the ground. The water last found was unfit for drinking purposes, but it contained so much gas that the well had the appearance of a gigantic soda fountain. The gas is almost pure hydrogen. By the use of two strings of tubing the water from the different depths is kept separated. A gasometer collects the gas from the water that comes from the 1250-foot level and suitable pipes convey it to different parts of the house. The gas is better adapted to heating than for illuminating purposes.

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to May 1st, 1884.

1882.	Ch'y Gr've.	Cooper.	Balltown.	Total.	Daily Av'ge
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
April	31,191	126,860	71,989	230,040	7,668
Total May 1, '84	3,214,972	1,594,541	1,106,836	5,916,349	8,094

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to May 1st, 1884. Cherry Grove has produced 3,214,972 barrels, Cooper 1,594,541 and Balltown 1,106,836 barrels. The daily average runs from the three fields during April were 7,668 barrels, a decrease of 777 barrels from the March figures.

The daily average runs of the old Cooper section for April were 1,530 barrels, and of the Henry's Mills pool 2,700, making a total of 4,230 barrels. The daily average for March was 4,631 barrels. The Balltown section had an average of 2,400 barrels during April, against 2,813 in March. The total pipe line runs from the Wardwell field in April were 14,263 barrels, and from the Baldridge section 25,325 barrels.

THE Standard Oil Company have commenced excavations for their new building, at Nos. 24, 26 and 28 Broadway. It will extend through to New street and be nine stories high. The structure will be built of Wyoming valley blue stone and pressed brick. It will have four passenger elevators, and the interior will be very elaborately finished. Charles Pratt will occupy the first floor, while the rest of the building will contain the central offices of the Standard. It is expected that the new quarters will be ready for occupancy by May 1st, 1885.

CRUDE MARKET FOR APRIL.

Throughout the month of April there was a continuance of the depressed feeling and low prices that characterized the market during March. The fluctuations ranged between 90¼ and 100 cents, never dropping below the former nor rising above the latter figures. The month began with crude weak at 94½ cents, and then followed a rapid decline to 90¼, at which point a little strength began to manifest itself. Several small spurts upward then took place until 99 cents was reached on the 18th of the month. A single sale occurred at Oil City at 100. This was the highest mark for April. Then followed a sudden depression to 91⅞, when a reaction began to set in, and the month closed with prices firm at 96¾ cents.

Bearish news from the new Ohio oil district is credited with the responsibility for the continued low range in the price of crude certificates. Exciting rumors from the Laing and Mills & Mullin wells produced considerable agitation among the brokers, and for several days the market seemed to be in the hands of the Macksburg manipulators. The entire trade waited expectantly for news from the Buckeye petroleum field, and the price of crude became a self-registering barometer, that marked the changes in the condition of affairs about two oil derricks in Noble county. But before the last days of April had vanished, the signs were unmistakable that the bear element in the petroleum trade was not to hold undisputed sway forever.

The Mills & Mullin well did perform all that the advertisments claimed for it. There were reports to the effect that the nitro-glycerine used was poor, and that the shot wasted its powers in the slate strata. At any rate, delays followed, and it was evident that the owners of the well were disappointed in their expectations of a better producer than the Laing. The bulls were not slow to take advantage of the changed aspect of affairs, and in the absence of field news of a depressing character, the bears became powerless to stem the tide of a buoyant market.

Business at the various exchanges was particularly active, showing an increase of 224,753,000 over the preceding month.

THE CLEARANCES.

	April. Barrels.	March. Barrels.
Bradford Oil Exchange	196,168,000	169.482,000
Bradford Prod. Pet	52,400,000	56,598,000
Oil City	269,054,000	221,133,000
New York, N. Y. Pet	302,752,000	224,664,000
New York, National	342,031,000	224,839,000
Pittsburg	152,636,000	193,572,000
Total	1,315,041,000	1,090,288,000

THE REFINED MARKET.

There was considerable activity manifested in the refined market during April. The month opened somewhat unsatisfactorily, but towards the middle there was a stronger feeling manifested, which advanced prices from 8⅜ for 70° Abel test to 8⅞ cents. The advance was due to the disposition of the foreign trade to replenish their stocks, combined with low freight rates and an increase in the amount of charter tonnage. The situation in Europe has been regarded for some time as favorable for an advance. The amount of petroleum afloat and loading for foreign ports, and sold ahead for future delivery, is the smallest known for many years. No sales have been made ahead later than thirty days, while formerly at this season of the year foreign buyers made purchases for delivery several months in advance.

The movement of refined in cases was variable, while the demand for naptha, residuum and gasoline was somewhat limited. The price of naphtha, however, remained steady at 7½ cents. At the close of the month, Bombay, Calcutta and Japan were large purchasers of refined in cases, so that ordinary 110° test has been held firmly at 10½ to 10¾ cents.

In London, the closing prices April 17 for American refined were spot, 6⅜ to 6⅝d; May delivery, 6⅜d; June, 6½@6$\frac{9}{16}$d; last four months of the year, 6$\frac{13}{16}$ to 6$\frac{15}{16}$d.

		New York. Cts.	Philadelphia. Cts.	Baltimore. Cts.	London and Liverpool. Pence.	Bremen. Marks.	Antwerp. Francs
T	1	8½	8⅜	8⅜	6⅛	7 45	18⅝
W	2	8⅜	8⅛	8⅛	6⅛	7 45	18⅝
T	3	8¼	8	8	6⅛	7 30	18
F	4	8¼	8	8	6⅛	7 30	18
S	5	8½	8⅜	8⅜	6⅛	7 45	18⅜
M	7	8½	8⅜	8⅜	6⅛	7 45	18¼
T	8	8½	8¾	8⅜	6⅛	7 45	18¼
W	9	8½	8⅜	8⅜	6⅜	7 60	19
T	10	8⅝	8⅜	8⅜	6⅜	7 70	19
F	11	8⅝	8⅜	8⅜	6⅜	7 70	19
S	12	8⅝	8⅜	8⅜	6⅜	7 70	19
M	14	8⅞	8⅝	8⅝	6⅛	7 70	19
T	15	8⅞	8⅝	8⅝	6⅜	7 90	19¾
W	16	8⅞	8⅝	8⅝	6½	7 80	19½
T	17	8⅞	8⅝	8⅝	6½	7 90	19⅝
F	18	8⅞	8⅝	8⅝	6½	7 90	19⅝
S	19	8⅞	8⅝	8⅝	6¼	7 90	19⅝
M	21	8⅞	8⅝	8⅝	6½	7 70	19⅜
T	22	8⅝	8¼	8¼	6½	7 60	19¼
W	23	8⅝	8¼	8¼	6½	7 60	19¼
T	24	8⅝	8¼	8¼	6½	7 55	19¼
F	25	8⅝	8¼	8¼	6½	7 55	19¼
S	26	8⅝	8¼	8¼	6½	7 60	19¼
M	28	8⅝	8¼	8⅜	6½	7 55	19
T	29	8⅝	8¼	8⅜	6½	7 65	19
W	30	8⅝	8¼	8⅜	6½	7 65	19

At a meeting of the directors of the Pittsburgh Exchange, held May 13th, it was decided to have regular calls of local stocks each day, commencing on the 14th inst.

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

PUBLISHED MONTHLY BY

McMULLEN & SNELL.

BRADFORD, PA.

W. C. ARMOR, MANAGER.

J. C. McMULLEN. A. L. SNELL.

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The Bradford office of the AGE is in the Producers Exchange Building.

AN exhibition of American products and manufactures is to be held in London, early in the year 1885. Our leading manufacturers have already signified their approval of the plan, and it cannot fail to be of great advantage to our industries and lead to an increase in our export trade. It is proposed to make the most comprehensive display of our natural products that is possible, and the oil industry should not be neglected in the project. General C. B. Norton, secretary of the recent foreign exhibition in Boston, has charge of the details of the proposed exposition, and will be pleased to furnish full particulars to manufacturers and producers who desire representation abroad. A very interesting exhibit might be made of the varieties of crude petroleum and the apparatus and machinery connected with the drilling of oil wells.

THE new Produce Exchange at New York was formally opened with appropriate ceremonies on the 6th of May. The members celebrated their farewell to their old quarters on Pearl street with a great deal of hilarity. They pelted one another with samples of grain and bags of flour, until some of them looked as if they had worked for weeks in a flour mill.

The new building is one of magnificence and splendor. It is in the modified Italian renaissance style, and cost upwards of two million dollars. The site is on lower Broadway and Whitehall street, near the well know Battery Park, and cost alone $1,000,000.

The trading or assembly room is 215x134 feet in area, and 60 feet from floor to centre of ceiling. Above this apartment are four floors which will be rented for offices.

This massive structure is supported on 1,600 piles; its estimated pressure on the foundations is 50,000 tons. It has been justly called a "palace of trade," and is one of the finest and most satisfactory edifices of the kind in the world.

IT is officially announced that nearly all of the United Pipe Line certificates have been transferred, and that the oil represented by them is now in the custody of the National Transit Company. The formalities attending the great sale have been accomplished in the business-like and systematic manner characteristic of the pipe line management. In another part of the AGE the report of the special committee appointed by the conference exchanges to learn how the transfer was to affect the petroleum trade is reproduced. It is evident that the committee performed their work carefully and well, and the results as published form a desirable addition to the documentary history of the oil business.

The producer finds that his oil is cared for in precisely the same manner, and that his credit balances are as readily convertible into cash as heretofore. He finds the same men at the same posts ready to attend to his business, just as they were before the sale took place. The transfer, to him is a change in name and nothing more. The old sign has been taken down, and a freshly painted one with a new firm lettered thereon put in its place.

The National Transit certificate displays the same capacities for rapid and capricious changes of value, and possesses the same desirable quality of accumulating freight charges as its old United prototype.

THE PRODUCING REGION.

ALLEGANY FIELD.

The Allegany field wore a bullish aspect at the close of the month of April. The canvass made by an AGE representative showed 47 new rigs up and building, 49 old rigs which had been standing for 30 days or more, and 71 wells drilling, a total of 167. Compared with the figures of April 1st, there was a decrease of 17. Macksburg throughout the month claimed the attention of the oil trade, and as the trade for the time being is absorbed in the consideration of one well or field, the outside wells of Allegany and the other fields of New York and Pennsylvania failed to influence the speculative tides. Two wells were completed in Wirt southwest of the Snow well. Dyer & Co.'s well, on the northeastern corner of lot 52, started at 60 barrels per day and is likely to make a 12 or 15-barrel producer. Lester, Jordan & Co.'s well, along the northern boundary line of lot 51, about three-quarters of a mile northeast of the LaBarr gas well, is a heavy gasser. Operations in South

Alma and Willing were of a discouraging nature. I. W. Shirley's well, on lot 40, came in dry.

L. H. Best & Co. are drilling a well on lot 42, north of the Shirley well. On lot 26, between the Harding and old Alma well on lot 25, the Last Chance Oil Co. has a well drilling. Near Shingle House, in Potter county, on the Princess farm, Allen, Princess & Co. are drilling a test well.

Drilling in Clarksville, in the vicinity of the Heuston & Brecht well, does not afford results commensurate with the hopes entertained at the time the initial well was struck. At the present writing the territory which would afford sufficient drilling to sustain the production is not in sight. The completion of 1200 wells in the Allegany field during the year 1883, failed to sustain the production. The yield of the district is expected to grow less as the months of the present year roll by.

THE BRADFORD FIELD.

The monthly report of the Bradford district shows an appreciable decline in new operations. With the exception of the Cole creek front there is a disposition to curtail operations. In most sections from the want of available territory; in others operators are talking of stopping the drill until the character and extent of the Macksburg field is more fully determined. John McKeown has started the drill on a purchase of 300 acres which he has held untouched at the Cole creek front for more than a year. The stock report for the past two months has shown the production to be hovering in the neighborhood of 32,000 barrels. No wildcat wells in this field disturb the oil man at the present time. The Windfall section is widening out perceptibly, but the grade is too light to make an impression on the production of the field.

THE LOWER COUNTRY.

This division of the field came into marked prominence before the trade last month, in view of the completion of Shidemantle's and Fisher & Co.'s gushers on the Wallace tract, Baldridge district. The former was drilled into the sand on Saturday, the 19th ultimo, and responded with fierce flows. In a short time, however, it began to lose its pristine splendor, and the flows came at longer intervals and were of shorter duration. The well was greatly overestimated by parties interested in giving the country a boom, but Shidemantle himself, having had several gushing wells previously, put the first 24 hours at 450 barrels. At this writing it is rated slightly above 100 barrels. Fisher & Co.'s No 1 came in on Monday following the Shidemantle, and made a little more than 400 barrels the first 24 hours. It is now producing about the same as Shidemantle No. 6. These wells created considerable excitement, and assisted the Macksburg wells to depress the market.

On the 25th, Phillips Bros.' agents drilled through the sand at the wildcat on the Hailey farm, one and a half miles east of the gushers, developing a first-class duster, and on the 29th, James S. Cooper's test on the Pierce, east 160 rods and north 45 rods from Fisher Bros. & Co.'s No. 1 was reported showing for a duster. The well, however, has been finished and put in pumping order, having made 40 barrels the first 24 hours. It is a good 15-barrel pumper and will lead to the drilling of the intermediate territory at once, as well as lively wildcatting, unless the shut-down companies succeed in getting hold of the territory. As yet there have been no particular exertions used in that direction. Wm. Reed, a Sewickley capitalist, has entered the field between the Wallace pool and Butler borough, and is getting several wells under way. He perhaps thinks if he fails to get the unctuous fluid in paying quantities, he may get the hydro-carbon in the gaseous state, to some extent, which is the next best thing to oil.

In the St. Joe fourth sand district they continue to find 50 to 60 feet of pebble rock, of as fine quality as was ever drilled up anywhere. There are various shades in the color of it, the top being gray, the next ten or twelve feet white pebble, then a yellowish or brownish pebble very coarse and loose, more loose white pebble, and so on to the bottom. No gushers have yet been developed, but the production of the wells already completed has in every case increased from the initial figures ten to fifty per cent., the oldest well in the district being rated at present at nearly double its initial production.

The completion of a small well in the vicinity of Gas City, last month, has resulted in several wells of a wildcat nature in Rockland township, Venango county, persons with faith largely developed having a theory that a gusher pool exists somewhere in the wilds of southern Venango to match the old "creek development." The chances are, however, that the best possible in store for the prospector in that section is another "Cranberry Patch," which latter, spotted, freakish district is on the wane. At Emlenton, the

denizens continue the mad rush of the drill in search of diminutive producers, each lot owner afraid lest his neighbor should become bankrupt drilling for the oil under the surface of the two lots. It is rivalry, not prospective wealth that keeps up the Emlenton excitement. For the rest, the lower country is inane and uninteresting. The old Clarion field, once an important factor in petroleum affairs has about dropped out of sight, only a well here and there that is drilling or new. In fact, Clarion can get no lower without ceasing to exist as a drilling or drillable territory.

WARREN AND FOREST.

The facts made plain by the drill in April, for the stretch of country eastward of the borough of Warren, exemplified more positively than ever the spotted and uncertain character of the territory. Within the borders of the little suburb known as Glade City, the Anchor Oil Co. completed two wells on a twenty-acre lease of the Guy Irvine farm. The one in the northeast corner of the plot proved a well of average calibre, starting off at 35 barrels when shot; the other, directly west, in the opposite corner, was a failure. Across the river, and considerably in advance of the wells on the Irvine farm, Brown Brothers drilled a well that made 40 barrels the first 24 hours after being shot. This experiment extends a theoretical belt from the older wells on the Irivine farm to the southeast and in the direction of the Stoneham development.

Operations in the older portions of the Glade district are unusually active, and the country between the Wardwell district and the Conewango creek will be thoroughly explored. This locality has been the especial favorite of that fate that directs the fortunes of the land-owner. Hardly a farm can be found that has not been leased again and again, and in many instances the fortunate farmer has received more money in the way of bonuses for oil leases than his entire farm and improvements could command if sold for farming purposes alone.

The western border of Glade township first attracted attention in 1876, and this old territory is again being drilled over by the enthusiastic searcher for oil. Wells are sunk right in the midst of old producers, and on land that was considered exhausted of oil years ago. The Glade operator is using the heaviest torpedos that the bore of the wells will admit. One hundred and forty quarts is the ordinary size, and several wells have been shot with one hundred and eighty quarts of nitro glycerine.

Some of the wells show few signs of oil when drilled through the sand. Instead of waiting several days to permit sufficient oil to ooze from the rock to furnish a tamping for the torpedo, the hurried well-owner bails out every vestige of oil, fills the hole up three or four hundred feet with water and pours in a barrel of salt. It is claimed that the salt water makes a better tamping for the heavy torpedos than oil. By such means as this many apparent dusters have been developed into three and four-barrel wells.

At Wardwell the Union Oil Co. drilled three wells in April that are classed among the list of failures. No. 7, on the King & Magee purchase, and No. 11, on the Reed property, found very slight indications of oil. No. 8, on the Reed, made no showing of crude when the drill passed through the sand. All were shot heavily, and Nos. 7 and 11 have been abandoned.

These wells, with the Anchor Oil Co.'s No. 7, on the Mower's tract, demonstrated the existence of a dry streak between the Wardwell group of producers and the Chambers' well, on the Stewart. The Anchor Oil Co.'s No. 2 well, on the Stewart, six hundred feet north of the Chambers, was drilled to the proper depth and found neither sand nor oil. J. R. Johnson & Co.'s No. 2, in the southwest corner of the Shirley farm, and a half mile to the northeast of the Chambers, has been completed with like results. The Union Oil Co. met with better success at their No. 14, east of the Chambers. It was drilled into the sand on the 3d inst., and began flowing at 30 barrels per hour. Its first day's output is recorded at 320 barrels. On the 12th inst., its daily production was 65 barrels.

The Gartlan well, situated 120 rods southwest of the Chambers, and in the northwestern corner of the Gartlan purchase, proved a crushing surprise to the trade. The gauge for the 24 hours ending Saturday morning, May 10, showed a production of 1098 barrels. The well was agitated frequently on the following Monday. A measurement taken on the afternoon of that day by an AGE representative, gave a yield of 34 barrels per hour. The Union Oil Co.'s well, on the Bowers farm, about 600 feet northwest of the Gartlan, had reached a depth of 1300 feet on the 12th. The irrepressible John Galloway is drilling a well near the Bowers farm house, northwest, and Shirley, Marsh & Co., are drilling wells southwest of the Gartlan. The companies interested in the territory about the new strike are very active in prosecuting new operations.

The failure of the Anchor wells, north of the

Chambers, indicate that the extreme limit of the pool in that direction has been reached. The Wardwell producers decline rapidly, and when they are closely drilled one well has an immediate and perceptible effect on its neighbor.

COOPER.

The eighteen wells completed on Cooper Hill and in the Henry's Mills section, in April, had a production on the last day of the month of 607 barrels. During March 27 wells were added to the finished list, with a new production on the last day of March of 1,187 barrels. Nothing of special importance was brought to view while the month of April was passing. The test well drilled by Kerberger, Horton & Co. on the Fox lands, near the Fox farm house, came in dry. The Clapp No. 4, one location distant from the gusher, which is still flowing largely, proved a small affair. After a shot it is only able to score forty barrels per day. John L. McKinney & Co. are reported to have shut their well on the southeastern corner of the Williamson, down near the top of the sand. There were seven rigs up and building, and 22 wells drilling in the Cooper district on the first of May. The daily average pipe line runs from the wells of the Cooper district in April were 4,230 barrels.

BALLTOWN.

May, Kelly & Grandin's No. 22, about 38 rods southeast of No. 21, is practically a failure. It cannot be rated above a five-barrel well. Their No. 24, on the belt line, southwest of No. 21, was reported dry when in the top of the sand. Deeper drilling demonstrated it to be a producer with a record of 300 barrels for the first 24 hours. No. 25, one location southwest of 24, is due any time. The wells found in advance of No. 18 have been unpretentious in their crude demonstrations, and the rich vein of oil cannot be discovered at the extreme southwest. The drilling along the well-defined streak presents no feature worthy of comment. The daily average runs in April from the Balltown wells were 2,400 barrels. There were four rigs and five drilling wells in the field on the first of the present month.

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to May 10, for the years 1883, 1884, were as follows:

	1884. Gallons.	1883. Gallons.
From Boston	2,083,710	1,405,896
Philadelphia	17,208,436	18,327,281
Baltimore	1,768,216	3,879,683
Richmond	....	173,449
Total	21,060,362	23,786,309
From New York	119,390,751	135,631,669
Total exports from United States	140,451,113	159,417,978

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to May 10th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
Great Britain.—London	3,869,359	15,680,838
Liverpool	393,623	3,052,128
Bristol	390,780	508,945
Ireland	752,849	1,924,247
Other ports	1,199,623	2,380,612
Germany—Bremen	13,671,106	19,302,196
Hamburg	15,292,603	16,314,058
Konigsburg and Stettin	1,569,136	470,367
Dantzic	....	....
Other Ports	....	....
France—Marseilles	....	....
Havre	....	....
Norway and Sweden	1,003,591	2,153,354
Russia	....	99,523
Denmark	2,246,827	3,152,654
Belgium	10,820,860	12,334,843
Holland	10,086,253	5,222,384
Spain	70,000	20,770
Portugal	238,066	704,166
Gibraltar and Malta	2,199,160	420,250
Italy	619,939	741,045
Austria.—Trieste, etc	1,480,870	2,936,838
Greece	....	....
Turkey in Europe	313,790	131,100
Turkey in Asia	483,700	279,830
India	9,139,020	3,325,400
China, Japan, etc	7,882,440	11,008,670
East Indies	7,860,070	12,030,390
Africa.—Alexandria, etc. E	503,210	837,680
Canary Islands	10,000	42,145
Other Ports	566,182	1,285,493
Australia	832,889	799,148
New Zealand	257,573	205,520
Sandwich Islands	125,100	42,500
South America.—Brazil	1,361,385	1,888,351
Argentine Confederation	1,107,270	1,080,750
Chili and Peru	189,300	713,000
U. S. Columbia	182,571	98,986
Venezuela	239,082	240,494
Other Ports	28,300	101,461
Central America	56,301	60,578
Mexico	488,720	554,869
British North American Colonies	307,614	209,615
Cuba	197,133	123,332
British West Indies and Br. Guiana	569,213	747,997
Other West Indies	490,028	382,863
Total . . . . . Galls.	99,095,536	123,609,390

CRUDE.

	1884.	1883.
France.—Havre	3,217,476	2,005,341
Marseilles	1,463,532	1,006,866
Bordeaux	607,441	967,518
Dunkirk	1,764,895	2,653,940
Other Ports	2,485,811	1,896,153
Antwerp	....	....
Bremen	....	383,452
Norway and Sweden	....	....
Spain	4,259,354	3,442,136
Cuba	1,222,947	1,102,087
Other Ports	3,555,915	....
Total . . . . . Galls.	18,577,371	13,457,493

NAPHTHA.

	1884.	1883.
Great Britain	878,042	1,445,477
France	564,088	602,538
Germany	211,090	877,479
Other Europe	25,095	625,218
Various Ports	39,529	32,925
Total . . . . . Galls.	1,717,844	3,583,637

RESIDUUM.

	1884.	1883.
To all Ports	1,048,625	2,853,281

	Gallons.
Total Refined since January 1, actual shipments	100,497,867
do do do do crude equivalent	133,997,156
do Crude do do actual shipments	19,036,630
Grand Total Crude and Crude equivalent . . . . galls.	153,033,786
Same time, 1883	178,270,013

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, May 10, 1884:

Ports.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	28	27	15	4	1	75
Philadelphia	37	5	2	.	.	44
Baltimore	8	.	.	.	.	8
Boston	.	.	.	.	.	.
Total May 10	73	32	17	4	1	127
Total April 9	32	41	9	.	1	83
Difference	41	9	8	4	0	44

There is an increase of 44 in the number of vessels loading and to load, May 10, over the total of April 9th.

APRIL OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN APRIL, 1884.

Allegany Field.

Scio.

Lot. Owner.	Barrels.
1, Pickering & Smith No 8	10
2, Coast Oil Co No 28	12
4, Minnow Oil Co No 5	5
11, Thompson & Vesey No 4	12
47, A J Applebee	8
Wells	5
Production	47

Alma.

1, Phillips Bros No 12	8
1, do No 13	8
1, Manhattan Oil Co No 7	8
3, M J McMullen No 6	10
4, Watson & Thompson No 10	8
4, Fertig Bros No 5	8
4, Chamberlain & McConnell est	8
5, Breckenridge & Mackin No 5	8
17, Carlin, Bussell & Co No 12	8
18, Mallory & Co No 2	10
18, H L McMullan No 8	10
18, do do No 9	5
19, Rumsey & Lovell No 1	10
20, Wm Coast No 18	15
20, Willets & Duke No 9	10
21, Finigan & Co No 12	10
23, Dow & Browning No 7	10
24, New Milford Oil Co No 6	10
24, Parkman No 2	10
37, Willetts & Crocker No 2	5
38, E T Anderson & Co No 8	12
38, Weiser Bros No 6	12
38, do No 8	12
38, do No 10	12
38, do No 21	8
40, A T Palmer No 9	10
86, O'Connor & Co est	5
106, Thornton & Dobbins	8
140, Duke, Willets & Rauber	8
142, Bolivar Oil Co	8
142, Dean & Smith	10
Wells	31
Production	284

Wirt.

1, Early Bros	3
33, Miner, Wellman & Fuller No 17	12
51, Lester, Jordan & Co	gas
52, Col Dyer, Farrel & Co No 1	15
Wells	4
Production	30
Dry	1

Bolivar.

5, Mulkin est	5
7, J D Downing No 7	8
7, W & J Duke No 5	10
7, Coast Oil Co No 24	12
7, do do No 27	12
7, do do No 29	10
7, do do No 4	10
8, Short & Son est	8
8, Jordan Oil Co No 3	8
15, Kelly & McMurray No 1 est	8
15, Sawyer & Co No 9	6
15, O P Boggs No 4	5
15, McCalmont Oil Co No 3	8
15, Sawyer & Co No 3	10
24, H M Ernst	10
23, Johnson & Conroy No 10	10
30, H. Stewart No 3	8
31, Smith & Co	5
38, Hanley & O'Shea	5
38, Frederick Basch	5
45, Knox & Co No 3	5
Wells	21
Production	168

Clarksville.

9, P T Kennedy, No 12	8
10, Whipple Bros No 6	10
10, Chauncey Oil Co No 1	8
12. Cuba Gas Co	gas
13, Goldsborough	dry
17, John McCool & Co	10
18, McKelvy & Co	7
Wells	7
Production	43
Dry	2

Genesee.

8, I Willets No 53	10
15, McCalmont Oil Co No 20	12
15, do do No 24	12
16, Lancy Bros No 8	10
22, I Willets No 12	4
Champlain farm, Emery Oil Co No 6	3
31, Hugh McMullan No 24	8
Wells	7
Production	59

Miscellaneous.

Tioga county, Gains, Whitehead & Co	dry
Friendship, Higgins & Co	dry
Willing, lot 40 I W Shirley	dry
Wells	3
Production	—
Dry	3

Bradford Field.

East and West Branches.

Farm. Operator.	Barrels.
Kellogg, Westmoreland Oil Co	6
Miller, J W Sherman	5
Whittaker, Chapin & Chapman	5
Foster, Frank T Barker	3
Davis, F W Davis	5
Buchanan, Buchanan Bros	4
Bingham, G H Van Vleck No 29	10
do do do No 30	10
do lot 168, R J Straight No 8	10
do Forest Oil Co No 13	10
Jewett, Emery Oil Co No 10	10
Dent, P C L & P Co, No 61	10
do do do No 62	10
do Whitney & Wheeler No 36	10
do do do No 37	10
do do do No 39	5
do Emery Oil Co No 23	10
King, Barnsdall Brothers, No 2	6
do do No 3	6
Sullivan, do	10
Howard, Page & McCormack No 2	8
West Branch, Harrison Emery	6
Taylor, Atlas Oil Co No 9	10
Lovejoy, Willoughby & Thayer No 4	10
Bingham, Bayne, Fuller & Melvin No 60	10
Paul, do do No 3	10
Hawkins, Union Oil Co No 14	12
Reed, Bradford do No 8	10
do do do No 9	10
Jewell, Martin & Gillespie No 5	5
Kissam, Wm Fleming No 11	10
Warrant 4914, Kearns & Kennedy	dry

Quintuple.

Lot 50, B F Brinton No 3	10
194, Atwater Oil Co	10
275, Lee Phillips	9
Wells	35
Production	285
Dry	1

Kendall Creek.

Storms, Wright	6
Shedd, P O Buchanan	5
Bingham, Mina Oil Co No 7	8
Melvin, P. C L & P Co No 83	10
do do do No 84	8
Grow, P T & W C Kennedy No 2	3
Chamberlain, Thompson & Lane No 9	8
Lafferty, G H Van Vleck No 39	8
Borden (Tram Hollow), No Name Oil Co	6
Norton, Dan Clark No 2	8
Failing, Daily & Co	5
Irons, Emery, Boyer & Breese	5
Wells	12
Production	85

Foster Brook.

E T Co, Boyne, Penny & Coleman No 7	10
do do do do No 8	10
do F L Blackmarr & Post No 13	8
do A E Jones No 3	10
do do do No 5	10
do do do No 6	10
do Enterprise Transit Co No 82	12
Borden, R W Argue No 10	8
do M O Wilbur & Co No 3	10
Willetts, I Willetts No 27	15
Lafferty, O A Childs No 17	15
C B & H, Charles Wilder	8
do Smedley Brothers	10
do Williams & Davis	8
Wells	14
Production	144

Four Mile.

Van Campen, George Van Campen & Sons No 19	12
do A F Bannon No 1	10
do Nelson & Jones No 4	10
do Wm Doe No 3	10
do Adams, Carson & Co No 1	3
do G L Watson & Co No 3	10
Zaph, Franchot Bros No 8	10
do do do No 9	10
Widow Carrol, C J Hickey No 6	8
Moultrous, John Coast, No 9	12
Stevens, Wm Stevens No 3	10
do William Chambers No 4	10
Karl, J Karl	6
Wells	13
Production	121

Indian Creek.

Pine lot, R G Bailey No 10	8
Loup, Hazelwood Oil Co No 47	8
do do do No 48	8
Barse, Geo V Forman, agt U O Co, No 34	10
Keating, Forest Oil Co No 45	10
Hamlin, Miller & Odell, No 3	10
W L Curtis, Riley Allen	4
Sparger, Bradford Oil Co No 2	10
do do do No 10	10
M Campbell, Watson & Rogerson No 5	8
Zimmer, Forest Oil Co No 6	8
Hill, Bovee & Duck No 5	10
Campbell, Waugh & Bligh	8
Keating, J L McKinney & Co No 31	10
Morse, Treat & Mallory	5
Keating, Reid & Brown	8
Wells	16
Production	135

Cole Creek.

Bingham, Forest Oil Co No 35	10
do lot 418 Forman & U O C No 24	15
do lot 494, do do No 11	20
do lot 536, Union Oil Co (Forman agt) No 29	20
do lot 534, do do do No 25	20
do lot 534, do do do No 30	25
do lot 587, John McKeown No 12	8
Wells	7
Production	118

Kinzua.

Bingham warrant 3077, Union Oil Co No 52	15
do do do do do No 53	25
do lot 136, P T & W C Kennedy No 1	8
do lot 135, J M & T A Tait No 11	10
do H P Malone No 23	10
Hoop, J M Tait	dry
Lot 5 J J Carter No 14	10

Kinzua Village.

Campbell, Porter & Conley	4
Wells	8
Production	82
Dry	1

Warren and Forest.

Glade and other Towns.

Tract. Owner.	Barrels.
Wardwell, Benedict & Robinson No 6	10
do do do No 7	15
R R lands, Hamilton & Co No 2	10
Mowris, (K & M pur) Union Oil Co No 7	2
Cobham, Union Oil Co No 8	2
do do do No 11	dry
Stewart, Anchor Oil Co No 2	dry
Shirley, J R Johnson & Co No 2	dry
Irvine, Anchor Oil Co No 3	dry
do do do No 4	10
Rogers, Brown Brothers No 1	15
Palmer, Anchor Oil Co No 2	8
J Roy, James Roy No 18	10
do do do No 20	10
Magee, J A Magee No 4	10
do do do No 5	8
McWilliams, C A Campbell No 1	12
Owens, North Warren, Phil Becker & Co	dry
Wells	18
Production	122
Dry	5

Clarendon.

36, Borchert & Smith, No 4	3
53, The Union Oil Co No 17	8
55, D Beatty & Son No 33	8
54, Bell, Hazelton & Stone	5
54, Mooney & Griffin	3
495, W W Ballard	5
464, D Riddlesperger No 1	6
464, do No 2	3
464, Columbia Oil Co No 2	8
464, do do No 13	8
464, M B McManus No 1	5
79, Armor & Bronson No 7	6
79, Murphy & Adams	6
106, Shugart & George No 9	6
106, Steelsmith & Taggert	6
105, Steelsmith, Ross & Co	6
108, Hackett & Shirley No 1	5
494, Patterson & Solliday	6
530, Whitehill Bros No 4	4
526, F G Keatley, No 2	6
527, F H Rockwell & Co No 11	6
561, do do do No 6	10
531, C A & D Cornen No 1	7
556, do do do No 7	6
556, do do do No 8	8

555, Nickel & O'Donnell No 3 6
675, (Cherry Grove) Waid & Dunham . . . dry
584, do Clark & Foster No 1 . 10

Wells 28
Production 166
Dry 1

Tiona.

109, J S Patterson No 20 6
109, do No 22 5
160, do No 21 8
109, Schonblom & Townsend No 1 8
109, do do No 2 7
109, do do No 3 6
110, Fertig & Henne No 10. 8
110, do do No 11. 6
110, do do No 12. 6
110, do do No 13. 6
165, Wm Pagett No 14 6
165, Hill & Powell 6
200, Wesley Chambers No 4 3
242, Anchor Oil Co No 3 4

Wells 14
Production 85

Cooper District.

Henry lands, McCalmont Oil Co No 23 , . 80
439, do No 12. 60
439, do No 13. 22
439, do No 16. 20
439, do No 17. 45
439, do No 19. 50
439, do No 20. 35
438, Shank & Emery No 13 75
Henry lands, Syndicate No 17 25
3198, Clark, Foster & Murphy No 7 20
Fox lands, Kerberger, Horton & Co . . . dry
Henry lands, H B Porter No 9 est 40
do do do No 11 est 30
Cooper tract M W S & Co No 34 30
369, J M Clapp No 4 10
396, Horton, Crary & Co No 7 10
Williamson, J L McKinney & Co No 8 . . 25
do do do do No 10. . 30

Wells 18
Production 607
Dry 1

Balltown.

5236, May, Kelly & Grandin No 22 5
5236, do do No 23 25
5236, do do No 24 25
4821, Balltown Oil Co No 19 25
4821, do do No 20 60

Wells 5
Production 140

Miscellaneous.

Irvinetown, Barnsdall & Co . . . . . dry
Pleasant twp, warrant 5249, Cornelius Curtis & Co . . . dry

Wells. 2
Production . . . . . –
Dry 2

Lower Country.

Venango.

Farm. Operator. Barrels.
Scrubgrass, Smullin . . . . . dry
Sutton, Anderson Bros 5
Flinchpaugh, Dale Bros No 20 20
Biery, Richardson & Williams 3
W A Hughes, Hughes & Co. 4
Rembold, Dale & Smullin No 10. 10
do do do No 11. 90
do J B Smithman 15
do Woods & Graham No 6 15
Echols, P H Judd & Co 5
W & K, Wolfe & Kugler No 4 6
Gormley, Richardson & Williams 3
Tract 67, J B Smithman 15
Egbert, Pine Grove Oil Co 5
Foster, Fisher Bros . . . . . dry

Vicinity Emlenton.

Russell, W F Baum 6
Scott, Barnard & Scott 5
Middleton, Potorff Bros 7
do Wm Foster 6
S Sloan, Martin 6
Weller, J Weller. 8
do R W Porterfield. 10
do E Goodrich 5
Hunter, Weaver & Co . . . . . dry
F & M, Flynn & Mackin 7
McCullough, Porterfield & McCombs . . 8

Wells 26
Production 260
Dry 3

Clarion.

Washington twp, Pine Grove Co. . . . . dry

Wells 1
Production . . . . . –
Dry 1

Butler and Armstrong.

Wallace, A Shidemantle No 6 125
do Fisher Bros No 1 150
McCalmont, Phillips Bros No 5 65
do do No 6 20
Black, Black Farm Oil Co . . . . . dry
Campbell, Dennison & Hoyt 15
Martin, Showalter Bros & Hartman 10
Foringer, Stevens & Co 5
East Brady, Unknown. 4

Wells 9
Production. 394
Dry 1

DRILLING WELLS, RIGS UP AND BUILDING MAY 1.

Allegany Field.

Scio.

Lot. Owner. Depth.
2, Dean & Irvin 650
2, do . . . . . rig
2, Waco Oil Co (old) . . . . . rig
2, Coast Oil Co No 29 (old) . . . . . rig
2, do No 30 . . . . . drilling
2, do No 32 . . . . . rig bldg
3, Frank Campbell (old) . . . . . rig
3, Coyle & Co (old) . . . . . rig
4, Minnow Oil Co No 7 1200
4, Mc Enroe Bros (old) . . . . . rig
11, Griffin & Co No 8 (old) . . . . . rig
11, do do . . . . . drilling
11, Lowcomer & Turner (old) . . . . rig
11, Thompson & Vesey No 3. 800
11, do do No 5. 500
11, do do No 6. . . . . rig
11, Reuben Carrol . . . . . drilling
12, Allen & Morse No 3 (old) . . . . rig
35, Duke & Norton Oil Co . . . . . rig bldg
47, A J Applebee No 2 . . . . . drilling
47, do do No 3 . . . . . drilling
50, The Union Oil Co No 6 1200
50, do do No 7 (old) . . . rig
50, do do No 8 (old) . . . rig
50, do do No 9 (old) . . . rig

New rigs 4
Old rigs 11
Drilling 10

Total 25

Alma.

1, Phillips Bros No 14 (old) . . . . . rig
1, do No 17 . . . . . rig
3, M J McMullan & Co No 7 . . . . drilling
4, Crane & Co (old) . . . . . rig
5, Breckinridge & Mackin No 5 . . rig bldg
18, H L McMullan No 10 . . . . . rig
19, Rumsey & Lovell No 2 100
20, Wm Coast No 19 300
20, do do No 20 (old) . . . . . rig
23, Vance & Horton (old) . . . . . 3 rigs
24, Koch Bros. 600
24, New Milford Oil Co No 7 (old) . . rig
24, do do No 8 . . . . . rig
24, W F Jones 800
24. do (old) . . . . . rig
26, Last Chance Oil Co . . . . . sand
24, Sutherland & Co No 5 . . . . . rig
38, Weiser Bros No 9 300
38, Weiser Bros & Co No 11 200
38, do do No 22. 200
38, do do No 23. . . . . rig bldg
38, do do No 24. . . . . rig
39, Weeter & Baldwin 200
40, A T Palmer No 8 300
44, Torrey & Co . . . . . drilling
66, Torrey & Jones . . . . . drilling
71, Willets. . . . . sand
88, Duke & Co (old) . . . . . rig
105, Hall & Co . . . . . rig bldg
106, Howard, O'Connor & Shanley . . rig bldg
106, do do do . . rig
107, I W Shirley No 3 . . . . . rig
107, do No 2 . . . . . drilling
120, McCalmont Oil Co No 2 . . . 900
120, do do No 3 . . . . . rig
141, Duke, Willetts & Rauber . . . . . rig
142, Willets & Duke No 8 200
Pikeville, H M Harkness No 3 500
142, Dean & Smith No 3 600
142, do do No 4 . . . . . rig

New rigs 14
Old rigs 9
Wells drilling 19

Total 42

Wirt.

14, Lester & Co. . . . . rig bldg
33, Miner, Wellman & Fuller No 18 . 100
33, do do No 19 . rig bldg
36, Elliott & Co. . . . . drilling
44, M C Mulkin . . . . . rig
44, Allegany Gas Co . . . . . rig
48, Nile Oil Co . . . . . drilling
52, (A J Jordan farm) Milton Oil Co . 300
60, Lester, Jordan & Co 300
60, do do . . . . . rig bldg
64, Lester & Co . . . . . rig bldg
Anchor Oil Co . . . . . drilling

New rigs 6
Old rigs. . . . . –
Wells drilling 6

Total 12

Bolivar.

6, I Collins (old) . . . . . rig
6. A P Tanner No 2 . . . . . sand
7, W & J Duke No 6 300
7, do No 15 1000
7, do No 16 . . . . . rig
7, Coast Oil Co No 19 . . . . . drilling
7, do No 20 . . . . . rig bldg
7, do No 28 . . . . . rig
7, do No 43 . . . . . rig
7, do No 46 . . . . . rig
7, do No 47 . . . . . drilling
7, do No 5 (old) . . . . . rig
Crandall, W & J Duke & Willetts . . . drilling
7, A A Hopkins No 16 (old) . . . . . rig
8, (Wetherby) Empire Gas Co (old) rig
8, (Ford) do do . . . 2 rigs
8, Jordan Oil Co No 4 800
8, do do No 5 . . . . . rig bldg
15, Sawyer & Co No 4 . . . . . rig
15, do do No 5 . . . . . rig
15, Kelly & McMurray No 2 200
15, O P Boggs (old) . . . . . rig
15, Sawyer & Co No 8 1200
15, do do No 10 300
16, Orin Wetherby, Empire Gas Co . rig
23, F C Streeter & Co No 2 200
23, do do No 6 . . . . . rig
23, Eighmey Bros No 2 100
24, H M Ernst 300
23, Johnson & Conroy No 11 (old) . . rig
24, J O Johnston No 3 300
24, do No 5 800
24, do No 7 . . . . . rig
30, H Stewart No 4 500
30, Fritz & Lowry No 8 (old) . . . . rig
30, do do No 10 (old) . . . . rig
31, Fisher Oil Co No 8 . . . . . sand
31, Smith & Co 200
45, Knox & Co No 4 . . . . . drilling
63, Northrup . . . . . drilling

New rigs 13
Old rigs 8
Drilling 20

Total 41

Clarksville.

9, Heuston & Brecht No 4 (old) . . . rig
9, Merritt & Co . . . . . drilling
9, dd do . . . . . rig bldg
9, P T Kennedy No 12 . . . . . drilling
10, Whipple Bros No 8 . . . . . rig bldg
10, do do No 7 600
10, do do . . . . . rig
10, Angell Oil Co 800
10, do do . . . . . rig
11, do do 500
10, Chauncey Oil Co No 4 900
10, do do . . . . . rig
12, Cuba Gas Co (old) . . . . . rig
17, William Cranston (old) . . . . . rig
17, John McCool 600
17, do do . . . . . rig bldg
18, Mahan Oil Co No 7 1000
34, Love & Co . . . . . rig

New rigs 7
Old rigs 3
Wells drilling 8

Total 18

Genesee.

8, I Willets (old) . . . . . rig
8, do No 54 (old) . . . . . rig
14, Chauncey Oil Co No 16 (old) . . . rig
14. Empire Gas Co (old) . . . . . rig
14, Merwin (old) . . . . . rig
15, McCalmont Oil Co No 21 1000
15, do do No 22 (old) . . rig
15, do do No 23 do . . rig
21. Empire Gas Co No 3 . . . . . rig
21, A T Palmer No 2 500
22, I Willets No 13 (old) . . . . . rig
23, do No 14 (old) . . . . . rig
23, do No 15 do . . . . . rig
23, do . . . . . rig
23, Hughes & Coughlin No 9 (old) . . rig
23, Emery Oil Co No 13 1200
23, do do No 14 100
23, do do No 15 (old) . . . . . rig
Champlain, Emery Oil Co No 7 (old) . rig
23, Chauncey Oil Co (old) . . . . . rig
29, William Cranston (old) . . . . . rig

31, Hugh McMullan (old), ... rig
38, S E Young (old) . . . . . rig
38, Empire Gas Co . . . . . rig

New rigs 3
Old rigs 17
Drilling 4
Total. 24

Miscellaneous.

Wellsville, Palmeter & Co (old) . . . rig
Willing, lot 80 O'Donnel & Manning . 600
Shingle house, Allen, Princess & Co . 500
Willing, lot 42 L H Best . . . . . drilling
Independence, Leasure . . . . . drilling

New rigs . . . . . –
Old rigs 1
Wells drilling 4
Total 5

Bradford Field.

East and West Branches.

Farm. Operator.	Depth.
Paton, McClure & Co (old)	rig
Bald Hill, Harris	drilling
Yeomans, Westmoreland Oil Co . . .	rig bldg
Clark, Barnsdall Brothers	1000
do McCray Bros	rig bldg
Erie "Y," Scott	rig
Willis, do No 29 (producing).	650
Hooker, Chapin & Chapman	100
do do do	rig
Beardsley, Curtis & Bronson	100
Foster, C H Foster	sand
Glass, T N Barnsdall	rig
Wall, Barse & others	sand
Bingham, G H Van Vleck, No 24 (old) .	rig
do do No 31	300
do lot 168, R J Straight No 9 . .	rig
do lot 178, do do No 11 . .	sand
Dent, P C L & P Co No 63	1200
do do do No 64	rig
do do do No 65	rig
do Whitney & Wheeler No 38 . . .	900
do Emery Oil Co No 24	rig
King, Barnsdall Brothers No 4 (old) .	rig
Mill lot, Whitney & Wbeeler No 8 . .	300
do do do No9(old)	rig
Crooker, Jennings & Curtis No 10 . . .	drilling
West Branch, Harrison Emery	100
Taylor, Atlas Oil Co No 10	400
do do do No 11	rig bldg
Lovejoy, Willoughby & Thayer No 3 .	1100
do do do No 7 .	rig bldg
do do do No 8 .	rig
Panl, Bayne, Fuller & Melvin No 4 . .	rig
Reed, Bradford Oil Co No 10 (old) . . .	rig
do do do No 11 (old) . . .	rig
Crooker, Roy & Archer No 11	1000
Moody, Emery Oil Co No 102	100
Freeman, Leopold Brothers	500
Jewell, Martin & Gillespie No 6	rig
O'Donnell, Tom Kelley	rig
Warrant 4914, Roth & Taylor (fishing)	1000
Sugar Run, W H D Chapin (old) . . .	rig
Kissam, Jos Stettheimer	rig

Quintuple.

25, E Strong & Co No 2 (old) . . . . . rig
44, J W Humphrey (old) . . . . . rig
83, Pat Newell 1600
181, Booth Bros. . . . . rig bldg
220, Abbott, Proper & Co (old) . . . . rig

New rigs 17
Old rigs 10
Drilling 21
Total 48

Kendall Creek.

Moore, Watson & Curtis No 4 100
do do do No 5 . . . . . rig
Melvin, P C L & P Co No 85 (old) . . rig
Mehan, Zane & Taylor No 10 500
Lafferty, G H Van Vleck No 40 300
Borden, Urquhart & Lavens (old) . . rig
Norton, Dan Clark No 3 . . . . . rig
do do do No 4 . . . . . rig
do F W Mitchell . . . . . sand
Keating, Sproul & Shaw . . . . . rig
Failing, Daily & Co . . . . . rig
Irons, Carter (old) . . . . . rig
Dennis, Mason Dennis. 500
Dodge, Dodge & Carter . . . . . 2 rigs
Willetts, Charles Young No 24 1000
do do No 25 . . . . rig

New rigs 8
Old rigs 3
Drilling 6
Total 17

Foster Brook.

E T Co, Boyne, Penny & Coleman No 9 1000
do do do No 10.rig bldg
do H L Blackmarr No 17 . . . . . drilling
do do No 18 . . . . . rig
do F L Blackmarr & Post No 8 . . rig
do do do No 14 . . drilling
do A E Jones No 7 100
do do do No 8 500
do Enterprise Transit Co No 81 . . . 900
do do do do No 83. . . 300
do do do do No 84. . . rig
do do do do No 85. . . rig bldg
Foster, C H Foster . . . . . 2 rigs
C B & H, Watson Oil Co No 30 300
do do do No 31 . . . . rig
do do do No 32 . . . . rig bldg
do Smith & Wood No 5 (fishing) 350
do do do do No 6 200
do Coldren & Wolf No 13 (fishing) sand
do do do No 14 (old) . . rig
do Josett Brothers. 300

New rigs 13
Old rigs 1
Well drilling 12
Total 26

Four Mile.

Van Campen Wm M Brown 1000
do do 1300
do do 100
do do . . . . . 2 rigs
do do . . . . . rig bldg
do Geo Van Campen & Sons No 20 300
do Geo Van Campen & Sons No 21 . . . . . rig bldg
do Nelson & Jones No 5 . . rig
do do do No 6 . . rig bldg
do Wm Doe No 2 900
do do No 3 (old) . . . rig
do Booth, Bovaird & Seyfang (fishing) 900
do G L Watson & Co No 4 . drilling
do Adams, Carson & Co(old) 2 rigs
do Tarbell & Co No 4 . . . 800
Waters, Griffin & Howard No 2 (old) . rig
Widow Carrol, Thomas Kervin No 6 . drilling
do do No 7 (old) rig
do do No 8 . . . rig
do do No 9 . . . rig
Moultrous, John Coast No 10 300
Stevens, William Stevens No 4 600
do do No 5 . . . . rig
do William Chambers No 5 . . . rig
do Book & Rbodes (old) . . . . rig
do C B Whitehead No 2 . . . . . sand
do do do No 3 . . . . . rig
Sparger, Chamberlain No 8 300
Stewart, E M Johnson 600
do do do (old) . . . . . rig
Firkel, Franchot Bros No 6 . . . . . drilling
Van Campen, Merrill & Perrin . . . . drilling
do do . . . . rig

New rigs 12
Old rigs 7
Drilling. 16
Total. 35

Indian Creek.

Pine Lot, R G Bailey No 9 (old) . . rig
Loup, Hazlewood Oil Co No 49 . . . . rig
Barse, U O Co (G V Forman agent) No 35 . . . . . rig
North Branch, J D Downing & Co (old) rig
do do do (old) rig
Keating, Forest Oil Co No 46 (old) . . rig
do do do No 47 (old) . . rig
Hamlin, Miller & Odell No 4 (old) . . rig
Dodge, Shear Bros No 7 1000
Zimmer, Shear Bros No 2 (old) . . . . rig
do do No 3 (old) . . . . rig
Weston, S S Ramsey No 5 . . . . . rig
Keating, J L McKinney & Co No 32 . 600
do do do do No 33 (old) rig
do do do do No 34 . rig
Barse, Moulton (old) . . . . . rig
Spiller, Spiller . . . . . rig
Rounds, Forest O C & A J Thompson No 30 100
Heissler, Dr W L Crisman No 1 . . . 800
do do do No 2 . . . 300
Morse, Morse, & Brown . . . . . rig

New rigs 6
Old rigs 10
Drilling 5
Total 21

Cole Creek.

Rew, Capt E Frawley (old) . . . . . rig
Bingham, lot 495, Forman and U O C No 2 1000
do lot 495, Forman and U O C No 3 . . . . . rig bldg
Bingham, lot 559 Union Oil Co (Forman agt) No 1 1000
do lot 569 Union Oil Co (Forman agt) No 2 700
do lot 569 Union Oil Co (Forman agt) No 3 350
do lot 579 Union Oil Co (Forman agt) 300
do lot 534 U O Co (Geo V Forman agt) No 31 (old) . . rig
do lot 534 U O Co (Geo V Forman agt No 32 . . . . . rig
do lot 466 A C Hawkins No 4. . 1650
do lot 580 John McKeown No 13 700
do lot 580 do No 14 400
do lot 580 do No 15 300
do lot 580 do No 16 300
do lot 580 do No 17 rig
do lot 580 do No 18 rig

New rigs 4
Old rigs 2
Drilling 10
Total 16

Kinzua.

Bingham, Union Oil Co No 51 900
do do No 54 . . . . . rig
do do No 55 . . . . . rig
Bingham, 136, P T & W C Kennedy No 2 200
do 129, P T & W C Kennedy No 4 . . . . . rig
do H P Malone No 24 500
do do No 25 800
do (C P & H pur) Emery Oil Co No 38 . . . rig
do do Emery Oil Co No 39 . . . drilling
do 136 Thos A & J M Tait No 6 rig
do do do No 7.rig bldg
Kane, Capt Byrom and others . . . . sand

New rigs 6
Old rigs . . . . . —
Drilling 6
Total 12

Warren and Forest.

Glade and Other Towns.

Tract. Operator.	Depth.
Wardwell, Benedict & Robinson No 9	750
do do do No 10	rig
Mowris, Union Oil Co No 8 (abandon'd)	500
do do do No 9 (old)	rig
Cobham, Union Oil Co No 12.	600
do do do No 13 (old) . .	rig
do do do No 14.	sand
do do do No 15.	500
do do do No 16.	rig
Bauer, do do No 1.	600
do do do No 2.	rig bldg
Madison, do do	rig bldg
Gartland, J A Gartland	1000
Emery, Marsh & Co	drilling
Cobham road, Galloway & Grace . . .	800
Elliott, J R Shirley	rig
Stewart, Wesley Chambers No 2 . . .	900
do do do No 3 . . .	600
Foster, do do No 1 (old)	rig
do do do No 2 . . .	rig
Frost, do do (old) . . .	rig
Stewart, Anchor Oil Co No 1	sand
Williams, do do No 1	300
Clark, do do No 2	600
Kirwin, Clark & Foster	rig
Yale, Bond, Cogswell & McKelvey . .	500
Myers, Fred Hayes	rig bldg
Storum, C A Campbell	500
do Hayes & Calhoun	rig
Lacy, Bradley	rig
Irvine, T J Melvin No 2	300
do Brown Bros No 3	rig
O H & S, Wesley Chambers No 4 . . .	600
do do No 5 . . .	rig bldg
Palmer, Anchor Oil Co No 2	rig
J Roy, James Roy, No 19	200
do do do No 21	rig
Blakesley, J C Welles	600
Lesser, C W Henry	rig
Verbeck, C W H Verbeck	rig
John Sweating, J A Magee	rig
Davis, Davis Bros	rig
Branch, S C Rhodes No 3	200
Asylum, North Warren, Sanford & Jameson (old)	rig
Lesler, Lesler & Son	drilling
Elk twp, Warrant 5576, Calhoun & Co	500
Richardson (Corydon), E A Van Scoy	rig

New rigs 19
Old rigs 5
Drilling 22
Total 46

Clarendon.

Lot. Operator.	Depth.
53, Union Oil Co No 18	150
54, D Beatty & Son (old)	rig
55, do do No 34	100
55, do do No 35	rig bldg
78. do do	rig
35, Bell, Hazelton & Stone	rig bldg
462, Stoneham Oil Co No 2	sand
462, D Riddlesperger (old)	rig
462, Fred Hue & Co	900
464, Logan & Cramer (old)	rig
464, Columbia Oil Co No 14	600
464, do do No 11	300
464, do do No 12	rig
464, do do No 17	rig
464, M B McManus No 2	600
461, Ludlow & Co (old)	rig
497, W Benedict No 12 (old)	rig
497, Wm Pagett No 2 (old)	rig
495, J Smith & Son No 2	300
495, Fred Hue & Co	rig
78, Kratzer	700
79, Armor & Bronson No 8	rig
79, Thayer & Crosby No 4 (old)	rig
105, P Golden & Co	100
105, R I Shugart No 7	100
106, C C Duffield & Co No 4	150
107, Fay & Lawton No 14 (old)	rig
107, do do No 15 (old)	rig
107, do do No 16	900
107, Lowery	600
108, Hackett & Shirley No 3	100
108, do do No 8	rig
108, do do No 4	rig
108, C H Filkins No 2	200
108, do do No 3	rig
495, W W Ballard No 2	drilling
495, do do No 3	rig
494, Patterson & Solliday No 9	500
529, Beecher & Copeland	200
526, F G Keatley No 3	800
526, do do No 4	rig
527, F H Rockwell & Co No 12	200
527, do do do No 13	rig
561, do do do No 7	rig
582, H G Lapham No 1	800
531, C A & D Cornen No 2	500
531, do do No 3	rig
556, do do No 9	rig
556, do do No 10	rig
591, (Cherry Grove) Taylor & Kline No 2	800
584, do do Clark & Foster No 2	rig

New rigs 18
Old rigs 9
Drilling 24

Total 51

Tiona.

Lot. Operator.	Depth.
103, Fertig & Henne No 7	sand
109, J S Patterson	200
109, do do	600
109, do do	100
109, do do	rig
109, Schonblom & Townsend No 4	600
109, do do No 5	500
109, do do No 6	rig
109, do do No 7	rig
110, Fertig & Henne No 14	900
110, do do No 15	rig
110, do do No 16	rig
161, A & S Short No 3	700
161, do do No 4	rig bldg
164, Helm & Mealey, No 3	800
165, Wm Pagett No 16	100
165, C H Coffin & Co No 2 (old)	rig
165, Hill & Powell No 8	100
201, Sage, Kelley & Co	150
242, Anchor Oil Co No 4	rig
206, T Farnsworth	rig

New rigs 8
Old rigs 1
Drilling 12

Total 21

Cooper District.

Tract. Operator.	Depth.
Henry lands, McCalmont Oil Co No 21	1500
do do do No 22	sand
do do do No 24	1000
do do do No 29	200
Lot 439, do do No 18	sand
396, Horton, Crary & Co	rig
Henry lands, Syndicate No 18	1500
2735, Reno Oil Co No 6	1600
J A Tract, Anchor Oil Co No 35	800
Cooper, Anchor Oil Co No 4	rig
do M W S & Co No 35	1500
do do No 36	1600
do do No 37	rig
do do No 38	rig bldg
Lot 407, Cochran Bros No 3	1600
do do No 4	1000
do do No 5	rig
do Shank & Emery No 2	200
do do do No 3	rig bldg
Lot 438, do do No 14	1800
do do do No 15	1300
do do do No 16	1500
do do do No 17	1000
do do do No 18	400
do do do No 19	300
Williamson, J L McKinney & Co No 5	1100
Clapp pur, J M Clapp No 4	sand
do do No 5	rig

New rigs 7
Drilling 21

Total 28

Balltown.

Lot. Operator.	Depth.
3194, Porcupine Oil Co No 18	drilling
751, (Cherry Grove) Porcupine Oil Co No 19	drilling
751, do do No 20	rig
751, do do No 21	rig
4821, Balltown Oil Co No 21	sand
4821, do do No 22	drilling
4821, do do No 23	rig
4792, Howe Oil Co No 12	drilling
4792, do do No 15	rig

New rigs 4
Old rigs . . . . . –
Drilling 5

Total 9

Miscellaneous.

Scott Run, Campbell (old)	rig
Warrant 3174, Forest Arters & Co (old)	rig
do 3672, Forest J. R. Johnson & Co	sand
do 3561, do Frost & Co	rig
Lot 600, Watson twp, Joy & Co	350
Lot 357, Nameless Oil Co	rig bldg
Roystone, Unknown	rig bldg
Irvineton, do	rig
South Valley twp, Vandergrift & Co	400

New rigs 4
Old rigs 2
Drilling 3

Total 9

Lower Country

Venango.

Farm. Operator.	Depth.
Rockland, Dale Bros	700
do Lee & Co	200
Biery, Richardson & Williams No 4 (old)	rig
Rembold, Dale & Smullin No 12	300
do do do No 13	drilling
do do do No 14	rig
do Woods & Graham No 7	400
do do do No 8	rig
do do do No 9	rig bldg
McCalmont, McCalmont & Richardson	500
Flinchpaugh, Lee & Matron	100
Sayres, Wolfe & Kugler	500
Kaufman, P H Judd & Co	550
do Dale Bros	spudding
McCalmont, P McCalmont & Co	200
do Braunschweiger & Co	500
McBride, McBride & Co (old)	rig
Salem, Unknown	400

Vicinity Emlenton.

Schmuck, A Schmuck	750
Comstock Goodrich & Hannifan	800
Russell, W F Baum	rig
McCombs, King Bros. & Heeter	100
Black, Crawford & Black	rig
Smith, C Weible (old)	rig
Weller, J Weller	drilling
do do	rig
do do R W Porterfield No 4	150
F & M, T J Flynn	400
do do	rig bldg
McCullough, Porterfield & McCombs	100
do do do	rig bldg
do Curry & Co	400
do Klingler, Saulsbury & Co	sand
Unknown, Black & Co	850
Graham, J J Nelson	rig bldg
Crawford, J A Crawford	rig
Ure, Chas Cooper	sand
Fox, J Martin	rig bldg
Richey, E Crawford & Sons	100
Lawrence, Sands & Co	rig

New Rigs 12
Old Rigs 3
Wells drilling 25

Total 40

Clarion.

Red Banks, Wm Reynolds	800
Lehigh, Pye & Co	700
Graham, W Berlin	rig
Washington, Pine Grove Oil Co	rig

New Rigs 2
Old Rigs . . . . . –
Wells drilling 2

Total 4

Butler and Armstrong.

Wallace, Fisher Bros No 2	1300
do do do No 3	900
do do do No 4	750
do do do No 5	100
do do do No 6	rig
Nebel, do do	rig
McKarns, do do	sand
Renfrew, A Shidemantle	rig
Hamel, Forest Oil Co	850
McCalmont, Phillips Bros No 7	1500
do do do No 8	300
do do do No 9	100
do do do No 10	rig bldg
Reiber, Baldridge Oil Co	sand
Pierce, Jas S Cooper	sand
Henderson, Johnson Bros	900
Martin, S Armstrong	rig bldg
S Shaffner, Wm Reed	rig
Campbell, Dennison & Hoyt	rig bldg
Mulligan, McGuire & Co	850
Muenster, Phillips Bros	700
Martin, Reed & Sutton	150
Turner, W J McKee (old)	rig
Wid McCray, Hunter & Cummings	250
Reep, Westerman Bros	rig bldg
Raymilton, Raymilton Oil Co	rig
do A W Raymond	250
Bauers, P A Rattigan	rig bldg

New Rigs 10
Old Rigs 1
Wells drilling 17

Total 28

To FACILITATE getting coal from the Fairmount mines, the B., N. Y. & P. intend building a branch line from an available point on its main line to Falls Creek, on the A. V. R. R.

THE regular daily train on the Bound Brook route, between Philadelphia and New York, makes a run of seventeen miles, including one stop and two "slow-ups," in exactly seventeen minutes. This is done on the part of the route between Bound Brook and Princeton. Eleven of these seventeen miles have been made in nine minutes and ten seconds, and two of the eleven miles occupied forty-seven seconds each. The speed is uniform and can be made with safety. In the railroading of the future seventy-five miles an hour may be only ordinary speed.

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	March 1884. Wells.	Prod'n.	Dry.	April, 1884. Wells.	Prod'n.	Dry.
Scio	7	55	.	5	47	.
Alma	22	204	.	31	284	.
Wirt	4	43	.	4	30	1
Bolivar	20	161	.	21	168	.
Clarksville	4	31	.	7	43	2
Genesee	10	82	.	7	59	.
Miscellaneous	1	.	1	3	.	3
Total	68	576	1	78	631	6

BRADFORD FIELD.

Division of Field.	March, Wells.	Prod'n.	Dry.	April. Wells.	Prod'n.	Dry.
E. & W. Branches	24	206	.	35	285	1
Kendall Creek	8	60	.	12	85	.
Foster Brook	13	126	.	14	144	.
Four Mile	18	155	.	13	121	.
Indian&Meeks Cr'ks	17	112	.	16	135	.
Cole Creek	5	77	.	7	118	.
Kinzua	2	33	.	8	82	1
Total	87	769	.	105	970	2

WARREN AND FOREST.

District	March. Wells.	Prod'n.	Dry.	April. Wells.	Prod'n.	Dry.
Glade	21	235	5	18	122	5
Clarendon	16	99	1	28	166	1
Tiona	15	88	0	14	85	.
Cooper	27	1187	1	18	607	1
Balltown	3	120	0	5	140	.
Miscellaneous	4	6	3	2	.	2
Total	86	1735	10	85	1120	9

LOWER COUNTRY.

District	March. Wells.	Prod'n.	Dry.	April. Wells.	Prod'n.	Dry.
Venango	31	285	6	26	260	3
Clarion	3	2	2	1	.	1
Butler and Armstrong	7	92	1	9	394	1
Total	41	379	9	36	654	5

GRAND SUMMARY.

District.	March. Wells.	Prod'n.	Dry.	April. Wells.	Prod'n.	Dry.
Allegany	68	576	1	78	631	6
Bradford	87	769	0	105	970	2
Warren and Forest	86	1735	10	85	1120	9
Lower Field	41	379	9	36	654	5
March Total	282	3459	20	304	3375	22
April Total	304	3375	22			
Difference	12	82	2			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	April 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	May 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	9	9	6	24	4	11	10	25
Alma	23	7	27	57	14	9	19	42
Wirt	5	1	2	8	6	.	6	12
Bolivar	17	7	19	43	13	8	20	41
Clarksville	4	4	8	16	7	3	8	18
Genesee	6	16	8	30	3	17	4	24
Miscellaneous	.	2	4	6	.	1	4	5
Total	64	46	74	184	47	49	71	167

BRADFORD FIELD.

Division of Field.	April 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	May. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	29	5	31	65	17	10	21	48
Kendall Creek	9	1	10	20	8	3	6	17
Foster Brook	14	1	13	28	13	1	12	26
Four Mile	14	4	16	34	12	7	16	35
Indian Creek	16	8	9	33	6	10	5	21
Cole Creek	1	1	7	9	4	2	10	16
Kinzua	3	0	8	11	6	.	6	12
Miscellaneous	.	.	.	.	.	.	.	.
Total	86	20	94	200	66	33	76	175

WARREN AND FOREST.

Division of Field.	April 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	May 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.
Glade	18	4	12	34	19	5	22	46
Clarendon	25	8	22	55	18	9	24	51
Tiona	13	1	13	27	8	1	12	21
Cooper	14	.	20	34	7	.	21	28
Balltown	6	1	2	9	4	.	5	9
Miscellaneous	0	1	4	5	4	2	3	9
Total	76	15	73	164	60	17	87	164

LOWER COUNTRY.

Division of Field.	April 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	May 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	8	7	21	36	12	3	25	40
Clarion	2	1	1	4	2	0	2	4
Butler & Armstrong	4	2	16	22	10	1	17	28
Total	14	10	38	62	24	4	44	72

GRAND SUMMARY.

Field.	April 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	May 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	64	46	74	184	47	49	71	167
Bradford	86	20	94	200	66	33	76	175
Warren & Forest	76	15	73	164	60	17	87	164
Lower Country	14	10	38	62	24	4	44	72
Total April 1	240	91	279	610	197	103	278	578
Total May 1	197	103	278	578				
Difference	43	12	1	32				

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. Month.	Runs. Bradford.	Runs. Allegany.	Runs. Outside	Total. Daily Runs
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590
April, 1884	34,370	12,261	19,162	65,793

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for April, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of April		2,572,458.84
Quantity of crude petroleum at close of April	2,594,333.84	
Less sediment and surplus	155,236.39	2,439,097.45
Receipts during April		297,473.86
Deliveries during April		275,028.79
Outstanding certificates, accepted orders, etc		2,113,000.00
Credit balances		481,333.84
Total liabilities April 30, 1884		2,594,333.84

SUMMARY of the statement made by the National Transit Co., May 10, 1884, showing acceptances and certificates and credit balances, total liabilities, gross stocks and sediment and surplus at the close of each month; also, receipts from all sources, and total deliveries for the month of April, 1884:

March acceptances and certificates	0,000,000.00
Credit balances	1,505,884.05
Total liabilities	1,505,884.05
Gross stocks	1,551,826.40
Sediment and surplus	45,924.35
Receipts from all sources	
Total deliveries	
April acceptances and certificates	28,390,000.00
Credit balances	6,656,076.68
Total liabilities	35,046,076.68
Gross stocks	37,426,125.20
Sediment and surplus	2,380,048.52
Receipts from all sources	34,922,397.44
Total deliveries	1,347.997.46

The above receipts from all sources were made up as follows:

Transferred from United Pipe Lines, as reported to N. F. Hilton, Esq., representing the Conference of Oil Exchanges	35,296,006.79
Less sediment and surplus	2,168,617.14
Net amount from United Pipe Lines	33,127,389.65
Runs from wells	1,652,604.73
Received in iron tanks	142,403.06
Total barrels	34,922,397.44

SUMMARY of the statement by the United Pipe Lines May 10, 1884:

Acceptances and certificates	271,616.75
Credit balances	154,046.66
Total liabilities	425,663.41
Gross stocks	447,819.08
Sediment and surplus	22,155.67
Receipts from all sources	
Total deliveries	33,127,389.65

SHIPMENTS AND STOCKS—RUNS.

RUNS OR RECEIPTS.

Pipe Line.	Apr., 1884.	March, 1884.
National Transit Co	1,652,604.73	1,727,813.83
Tidewater	297,473.86	300,330.00
Octave Oil Co	2,767.79	3,072.12
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	7,485.99	6,303.01
Cranberry Pipe Line	13,478.02	11,961.78
Total	1.973,810.39	2,051,480.74
Less oil counted twice as runs		49,187.38
		2,002,293.36
Daily average	65,793.68	64.590.11

In the April runs the 142,403.06 barrels of oil received by the National Transit Co. in iron tanks are not included.

DELIVERIES OR SHIPMENTS.

Pipe Line.	Apr. 1884.	March, 1884.
National Transit Co	1,347,997.46	1,629,921.39
Tidewater	275,028.79	233,196.58
Octave Oil Co	3,340.57	2,915.89
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	3,304 60	3,937.73
Cranberry Pipe Line	13,512.40	3,827.51
Total	1,643,183.82	1,873,799.10
Daily average shipments	54,772.79	60,445.13

Daily excess of runs over shipments, April, 1884	11,020.89
Daily excess of runs over shipments, March, 1884	4,144.98
Daily exeess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

Pipe Line.	Apr 30, 1884.	March 31, 1884.
National Transit Co	35,046,076.68	33,553,053.06
Tidewater	2,594,333.84	2,572,458.84
Octave Oil Co	7,419.29	6.208.50
Charley Run	3,986.81	3,986.81
Shaffer Run	28,052.75	28,052,75
Franklin (limited)	22 934.68	18,753.29
Cranberry Pipe Line	24, 78.61	24,112.99
Total	37,726,882,66	36,206,626.24

Stocks increased April, 1884	1,520,256.42
Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	396,004.51

	Receipts.	Deliveries.
Daily Average April, 1884	65,794	54,773
Daily Average March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52,737
Daily Average February	65,208	44,352
Daily Average January	65,125	43,813

EXPORTS TO THE FAR EAST.

The exports of refined oil in cases for the Far East from January 1st to May 1st, 1884 and 1883, according to Mr. Geo. H. Lincoln's Monthly Circular, were as follows:

	1884.	1883.
To China, cases	459.270	425,165
To Japan, cases	319,919	714,752
To Bombay, Calcutta, Rangoon, etc., cases	1,083,458	339,540
To Java, Angier, f. o. Batavia, etc., cases	746,587	944,149
Total	2,609,234	2,423,606

WILL. A. IMUS.

Died, Tuesday evening, May 13th, 1884, William A. Imus, agent and cashier of the Tidewater Pipe Company. He was stricken with appoplexy during the forenoon, and lay unconscious till death intervened. His demise was a shock to his numerous friends in the oil regions.

The deceased was born at Silver Creek, New York, in 1851. He learned telegraphy, and held position for several years as operator for the Titusville Pipe Company, became chief operator for the Empire Line at Parker, and joined the United Line force in 1877. In 1878 he came to Bradford, and held position with the Equitable Pipe Line. This was merged into the Tidewater, and Mr. Imus became its agent and cashier, ably filling the place until his death. He was a genial, warm-hearted man and a courteous officer.

The Knights Templar took charge of the funeral ceremonies, and with many other societies of which the deceased was a member, assisting, paid the last tribute of respect to his memory, depositing his remains in the little cemetery at the town where he was born.

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, MARCH, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., MAY 5, 1884.

CUSTOMS DISTRICTS.	Mineral Crude.		Naphthas.		Illuminating.		Lubricating and Paraffine Oil.		Residuum.		Total.	
	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars.
Boston & Charlestown, Mass.	.....	....	.....	....	655,980	77,281	15,327	4,226	.....	....	671,307	81,507
New York, N. Y.	4,590,670	366,267	169,121	25,663	22,114,316	2,175,677	788,876	166,868	354,186	23,894	28,017,169	2,758,369
Philadelphia, Pa.	382,022	30,762	.....	....	3,150,296	303,234	134,250	26,822	.....	....	3,666,568	360,818
Baltimore, Md.	.....	....	.....	....	732,280	64,009	10,135	1,600	.....	....	742,415	65,609
San Francisco, Cal.	.....	....	3,300	1,129	28,420	6,145	1,784	897	.....	....	33,504	8,171
All other districts.	.....	....	1,300	156	88,119	15,171	7,250	2,451	.....	....	96,669	17,778
Total for Mar. 1884	4,972,692	397,029	173,721	26,948	26,769,411	2,641,517	957,622	202,864	354,186	23,894	33,227,632	3,292,252
Total for Mar. 1883	2,650,566	205,123	814,059	58,161	30,961,771	2,853,648	1,194,367	245,939	688,338	60,265	36,309,101	3,423,136
Total for 9 months, ended Mar. 31, 1884	50,162,041	3912,228	12,965,274	892,136	308,690,879	28,262,794	7,939,720	1653,018	3,953,376	259,642	383,711,290	34,979,818
Total for 9 months, ended Mar. 31, 1883	39,938,740	2969,305	13,679,546	1052,296	296,883,140	25,954,858	7,515,364	1748,180	4,309,368	298,734	362,326,158	32,023,373

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	Apr. 19, 1884. Barrels.	Mar. 22, 1884. Barrels.
London	289,730	329,696
Trieste	53,154	67,261
Seven Continental Ports	1,436,816	1,392,242
Total Stocks afloat and ashore	1,779,700	1,789,199
Decrease in Stocks since Mar. 22		9,499

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS APRIL 19, 1884.

	Stocks W'k end'g April 19.		Stocks Afloat W'k end'g April 19.		Unloading W'k end'g April 19.		Grand Total Stocks Afloat & Unloading.		Receipts. Jan. 1 to April 19.		Shipments Jan. 1 to April 19.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	231,717	289,730	96,032	...	13,000	...	340,749	289.730	172,815	147,308	184,548	212,841
Trieste	8,827	42,924	20,762	9,230	...	...	29,589	53,154	11,756	100,112	70,793	65,671
Bremen	686,747	725,085	68,409	78,709	58,500	10,000	813,656	813,794	289,360	232,724	358,754	332,891
Hamburg	107,736	138,301	103,520	70,811	97,800	39,900	309,056	249,012	112,044	271,174	203,319	250,439
Antwerp	192,305	113,982	16,572	56,205	14,000	...	222,877	170,187	215,111	209,122	210,658	303,415
Rotterdam	42,159	45,712	10,034	12,183	11,000	20,000	63,193	77,895	30,669	64,681	63,705	67,885
Amsterdam	46,888	43,856	...	14,814	20,000	8,000	66,888	66,670	57,992	105,346	60,516	86,853
Stettin	23,154	20,752	12,598	7,622	5,000	26,700	40,752	55,074	26,817	21,308	36,848	60,393
Danzig	12,220	4,184	...	...	...	...	12,220	4,184	19,258	10,985	29,969	22,954
Total	1,111,209	1,091,872	211,133	240,344	206,300	104,600	1,528,642	1,436,816	751,251	915,340	963,769	1,124,830

	1881.	1882.	1883.	1884.
Total stocks exclusive Danzig, London and Trieste	334,327	842,275	1,098,989	1,087,688
Total afloat, exclusive Danzig, London and Trieste	345,027	228,555	211,133	240,344
Total unloading, exclusive Danzig, London and Trieste	158,400	150,000	206,300	104,600
Grand Total exclusive Danzig, London and Trieste	837,854	1,220,830	1,516,422	1,432,632
Total Shipments exclusive Danzig, London and Trieste	23,579	39,147	32,878	33,112
Total Shipments since January 1, exclusive Danzig, London and Trieste	962,967	850,617	933,800	1,101,876

THE CRUDE MARKET FOR APRIL, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Highest.	Lowest.	Closed.	Oil City. Opened.	Highest.	Lowest.	Closed.	New York. Opened.	Highest.	Lowest.	Closed.	Pittsburgh. Opened.	Highest.	Lowest.	Closed.
T	1	94⅜	94⅜	93	93	94¾	94¾	93	93	94⅝	94⅝	92⅞	93	94⅝	94⅝	93	93
W	2	92¾	92⅞	90¼	90⅜	92⅞	93	90⅝	90⅝	92⅞	92⅞	90⅜	90⅜	92¾	92⅞	90½	90½
T	3	91	92⅜	90½	91¼	91	92½	90⅝	91⅜	90⅞	92⅝	90⅜	91⅛	90⅞	92⅜	90½	91¼
F	4	91¾	93½	91⅝	93⅜	91⅞	93¼	91⅞	93¼	91⅞	93½	91¾	93⅜	91¾	93⅜	91¾	93¼
S	5	93	94	92⅜	93⅛	93¾	94	92⅜	93¼	94	94⅛	92⅜	93⅛	93⅝	94⅛	92½	93
M	7	93	93	90¼	90⅝	93¼	93¼	90½	90⅝	93⅛	93⅛	90⅜	90¾	93	93	90⅜	90⅝
T	8	90¾	92¼	90½	92¼	90⅞	92⅜	90⅝	92⅜	90¾	92⅜	90½	92⅜	90⅝	92¼	90⅝	92¼
W	9	92½	93¾	91½	93⅝	92½	93⅝	91½	93⅝	92¼	93¾	91½	93⅝	92⅜	93¾	91½	93⅝
T	10	93⅛	94¾	92⅝	93¼	93	94¾	92¾	93¼	93¼	94¾	92½	93¼	93	94¾	92¾	93⅜
F	11	Go	od	Fri	day.												
S	12	93	95⅝	92⅞	95¼	93¼	93⅝	93⅛	95½	93	95½	93	95½	93	95½	93	95½
M	14	96	97⅜	94¼	94½	96¼	97½	94½	94⅝	96¼	97½	94⅜	94¾	95¾	97⅜	94½	94⅝
T	15	94	94¾	93⅜	94⅛	94⅛	94¾	93⅛	94⅛	94½	94⅞	93½	94⅜	94¼	94⅞	93½	94⅛
W	16	94⅜	97⅝	94⅜	97¼	94½	97⅜	94⅜	97⅜	94⅝	97⅜	94½	97⅜	94½	97⅛	94¼	97⅛
T	17	98	99	96¾	97	99	100	97⅛	97⅛	98¼	99	97	97½	99	99	96⅞	97
F	18	96¼	97½	94⅜	97	96⅞	97⅛	94½	97⅛	96	97⅜	94¾	97⅛	96½	97¼	94½	97
S	19	97⅛	98⅝	95¾	96⅞	97	98⅞	96	96¾	97¼	98½	96½	97	96⅝	98½	96	97
M	21	95	95	93	93⅞	95	95	92	93⅞	95	95⅛	93½	94	94½	94⅞	93½	94
T	22	94	94⅝	93	93	94	94⅝	93	93	94¼	94¾	93	93	94⅛	94⅝	93	93
W	23	92¾	93⅝	91⅞	92⅝	92⅝	93½	92	92¾	92¾	93⅞	92	92⅝	93	93½	92	92¾
T	24	92⅞	94⅜	92¾	93⅛	92½	94	93	93½	92¾	94	92¾	93⅛	92¾	94	92⅝	93
F	25	93¾	95⅛	93⅝	94⅞	93⅝	94½	93⅝	94½	93¾	95¼	93⅝	95	93½	95⅛	93½	95
S	26	93¾	95	93¾	94¼	94	95⅛	94	94⅛	94⅛	95	93¾	94¼	93½	95	93½	94½
M	28	94⅜	94¾	93¾	93¾	94⅝	95	93¾	93¾	94½	94¾	93⅝	93¾	94½	94¾	93¾	93¾
T	29	93⅝	94⅞	93½	94⅛	93⅝	94⅞	93⅝	94⅛	93½	94¾	93½	94⅛	93⅝	94⅞	93½	94⅛
W	30	94½	96⅞	94½	96¾	94½	97	94½	97	94⅝	96⅞	94⅝	96⅞	94½	96⅞	94½	96⅞

MAY DAYS IN MACKSBURG.

Saturday morning, May 3d, the writer started for Macksburg, a field which, before "the crash," exacted some attention from the oil trade on account of its possibilities.

The wooded hills of Bradford, raising their summits, as some of them do, more than 2,000 feet above the level of the sea, still wore the russet or brown tints of autumn. During the closing days of winter and the first weeks of spring their cold pinnacles are rarely bathed in sunshine. In "this glorious climate" of Bradford, which we all sadly miss when we are remote from it, there is but little sunlight afloat during springtime, and dame nature seems reluctant to doff her winter garb for the brighter tints until she is comfortably reposing in the lap of summer. The 6:18 a. m. train on the Erie branch connects at Carollton with the "Thunderbolt," a fast train running between New York and St. Louis. This train swings along at a mad pace over the straight and level track of the N. Y., P. & O. R. R., arriving at Creston at 1:23 p. m., slow time. The south-bound train on the Wheeling & Lake Erie R. R. makes its departure from Creston at 2:26 p. m., and arrives at Cambridge at 8:55, where you stop over night, 33 miles from Macksburg. When you reach Macksburg and canvass the town for a bed, you will be glad that you halted from necessity at Cambridge and took the 6:55 a. m. train for the new oil field. The country between Salamanca and Creston is so level that the scenery is almost unbroken by a gently rising hill. West of Meadville, through Northern Ohio, the same level expanse is observed, but here it is spread out like a mosaic of pasture fields, meadow lands and tracts of growing grain. As you leave the lake region of Ohio and travel southward through the State, there is a radical change in the landscape. The hills are now as conspicuous by their presence as they were at the north by their absence. It is eleven miles from Bradford to Carrollton, five miles from there to Salamanca, 227 miles from Salamanca to Creston, and 130 miles from that point to Macksburg, making the distance from Bradford to the Ohio oil field, by this route, 373 miles. The distance by the Rochester & Pittsburgh R. R. is about the same. It is 207 miles from Bradford to Pittsburgh, 110 miles from Pittsburg to Newcomerstown, on the Pittsburgh, Cincinnati & St. Louis R. R., and 54 miles down the Wheeling & Lake Erie from Newcomerstown to Macksburg, making the distance from the northern metropolis to Macksburg, by the southern route 371 miles. The unpretentious hamlet which gives a name to the Buckeye oil field, has an air of antiquity about it, but is quite as uninteresting as a frontier oil town of mushroom growth. It is as irregular in its plan as its houses are in shape, color and size. It would be impossible to find three houses on any one street in a straight line. The town has three or four general stores, a gin mill, hardware store, several blacksmith shops, but no hotels. The residents take the oil men in kindly, and a genial hospitality pervades the town and country. By rail Macksburg is twenty-five miles from Marietta. The field is in the northern part of Washington county and the southern part of Noble county. The detailed history of the early wells, which have helped to direct operations and shape the development, was ably and accurately written by Mr. P. C. Boyle for the December AGE, and will not be repeated in this article. That portion of Washington and Noble counties which affords the present defined oil area is drained by Duck creek and its forks. It is without doubt the most hilly oil country under the sun. A well-defined ridge extends from Macksburg, in a northeasterly direction, to Middleburg. The hills are of all forms and dimensions. Some of them stand out barren of trees and alone. The barometer indicates that the highest of them are about 400 feet above the low ground along the serpentine Duck creek. The farm houses are built on the summit of the hills and ridges, and command far away and receding views of the surrounding country. The valleys through which the small and some of the larger streams find their circuitous way are very narrow. A leveling process seems to be going on, and the numerous land slides cause the slopes to creep down and encroach on the width of the valley. The derrick and tank house at the Laing well occupy the entire bottom of the narrow defile of Long run. The surface is lumpy and broken, and to one a short distance above it, would seem like a field of ant hills. One travels with some physical tire from one summit to another, without danger of losing the way.

The neat and comprehensive map presented with this number of the AGE makes the situation plain to the reader. It shows the topography of the country for eight miles in one direction and six in another. While some of the farm names may have been changed, it will be found as accurate as any of the larger maps issued.

The area upon which the wells are located has a length of two and a half miles and a width of

mile and a quarter. The southwestern and northwestern limits of the old development are pretty well defined. East of the Laing well and northeast of it the bordering lines remain to be drawn, and the field to-day is as much of an experiment as it was before the drill penetrated the sand at the Laing and Mills & Mullin wells. On the seventh of May there were 29 wells in the field producing from the deep sand or "1500-foot" rock. There were several new wells in the list, and the total production from these was estimated at 233 barrels. The following is the list:

Farm.	Operator.	Barrels.
Marke, Willis	Decker No 1	3
Roff,	do No 2 (new well)	20
Atkinson,	Decker & Sons No 1	7
do	do No 2	7
do	do No 3	7
do	do No 4	19
Roff, McManus	Nos 1, 2 and 4	30
Perkins,	do No 3	7
Perkins, Hulings	No 1	3
Waller,	do No 1	3
James, St James	Oil Co	7
R C Smithson,	Macksburg Oil Co No 1	7
DeLong,	do do No 2	3
do	do do No 3	12
Smithson, Stevens	& Co No 1	4
do	do No 2	7
do	do No 3	5
Rice, Rice	No 7	3
do do	No 14	4
do do	No 16	3
Snyder, C S	Jaquay No 1	2
Crawford, Laney	& Borckman No 1	1
Warren, Clark	& Co	3
Perkins, Garvey		15
O C Co lands,	Laing	40
Clark, Mills	& Mullen est	8
McLouth, Frew	& Co	3
Wells		29
Production		233

The Laing well began its producing career on the 19th of April, making about 125 barrels the first 24 hours. At the end of nineteen days the oil which had been run, together with what remained in the tanks, gave an average daily yield of more than 60 barrels. Drillers who have seen the sand of the Laing well claim that it resembles the Butler county third sand. The sand had a thickness of 17 feet at this well, and was reached at a depth of 1538 feet. Only a little oil was found until the drill penetrated the rock to the depth of eight feet. The Mills & Mullin well, on the Clark farm, a half of a mile northeast, was torpedoed a second time on the morning of the last day of April. It is reported that the first torpedo was exploded above the oil-bearing rock, and that the second was lowered so that only a portion of the explosive compound spent its force on the sand. It is also claimed that the sand is inferior to that found at the Laing well. The well began producing on the first of the month. On the 5th the 600-barrel tank contained 4 feet 4 inches. The measurement on the 7th showed 4 feet 9¾ inches, and a gauge on the 10th showed 5 feet 8½ inches. The tank on the 10th held 2 feet 5½ inches of water. For the first ten days the Mills & Mullin well averaged about eighteen barrels per day. The shipments of oil from the Macksburg field during April aggregated 3621 barrels, a daily average of 120 barrels. The stocks at wells on the first of May amounted to 5,000 barrels of oil.

The following is a list of the new operations as they were on the 7th of May:

Farm.	Operator.	Depth.
Schilling,	Ohio Oil Co	rig
Paton,	Mills & Mullin	rig
Stevens,	do	rig
Granberry,	Stevens Mills & Mullen	timbers out
Warren,	John Denman	650
Neptune,	Union Oil Co	drilling
Armstrong,	Clark & Whitney	rig bldg
Atkinson,	do	rig
Elba,	Brown & Co.	rig bldg
Perkins,	C J Garvey	rig
Crawford,	Borckman & Co	sand
Atkinson,	Decker & Son	drilling
James, St.	James Oil Co	drilling
Smithson,	Stevens & Co	drilling
Rice,	George Rice	1000
McLouth,	Frew & Co	1000
Smithson,	Macksburg Oil Co No 4	rig
DeLong,	do do No 5	rig bldg
Rigs		10
Drilling		8
Total		18

The Denman well, on the Warren farm, located three-quarters of a mile northwest of the Mills & Mullin well, and the Union Oil Co.'s well, on the Neptune farm, southeast of Middleburg, are the two important wells now drilling. These wells will be fair tests of a belt theory to the northeast. The Denman well was cased at a depth of 620 feet May 8. They found three layers of the cave rock or mud vein at the well. The first at a depth of 130 feet, the second at 360 and the third at 615 feet.

Whatever may be the size of the wells found in the new field, it can never be rapidly drilled so long as existing difficulties are encountered. A well on the hills will have to be cased twice, and in some instances three times, to shut off the mud veins. It requires ten days to drill through the salt water sand, which has a thickness of 200 feet. Few wells on the flats have been drilled in less than forty days, and the majority have required a longer time. There is a scarcity of timber in the Macksburg field. The sombre hemlocks of the Pennsylvania region are supplanted in Ohio by the poplar and sturdy oak. These two standard varieties, of which the derricks are built, cost $15 per thousand. A rig complete is worth $450. The roof of a derrick requires more lumber than one in the Pennsylvania region, and is made salt water tight.

D. W. Clark & Co. are established in the hardware and oil well supply trade at Macksburg, and R. F. Borckman, the well-known banker and hardware dealer, has already unloaded a dozen cars of tubing and casing in the field.

The producer in the Macksburg field is likely

to be well cared for by the pipe lines. The well owner in the oil regions has found it a pleasant thing to be sought after by the pipe lines. Generous rivalry has a tendency to make pipe line officials as well as other men more accommodating. Three pipe lines will have a solicitous care for the noble producer. Royce, Brundred & Dale pipe oil from the wells to the Wheeling & Lake Erie R. R. and ship it to Marietta. The West Virginia Transportation Co., represented by Gen. Van Bukey, will build a pump station at Elba, three miles below Macksburg, and lay a pipe line over the hill to the Muskingum river. They ship oil down the river on boats to Marietta, and from there on the Ohio to Parkersburg. The National Transit Co. have Mr. Dailey in the new field, and are making preparations to receive crude at the wells. Superintendent Smedley was on the ground this month to locate iron tanks and chose a site for a pump station. On the 10th they were grading for a 22,000 barrel tank, on a purchase north of the railroad, a half mile southeast of Macksburg. They have bought a corner lot in Macksburg, where an office will be erected at an early day.

The Macksburg field, so far as its extent and outlines are concerned, is as much of an experiment as it was before the Laing well was demonstrated to be a stubborn factor in the crude problem. The greatest thickness of sand yet claimed by any operator is 17 feet. The average of all the wells is much less than this depth. If it is proven to be a white or pebble sand field, it is not likely to prove extensive judging from the precedents of the past. The rig building and drilling in the country will be slow. At times during the summer there is a dearth of water, so that an artificial supply is imperative in some sections. The majority of the lands have been secured in such a manner that they can be slowly operated. The Union Oil Co. will control the lion's share of the territory if the belt extends to the northeast. Under the most favorable circumstances, if a field of broad area is discovered, it will be developed at a slow pace, and the production for a long time should not depress the price of the mobile staple below a paying rate for the Pennsylvania region.

The steamship Oregon, which lately made the passage of the Atlantic in the unparalleled time of six days ten hours and ten minutes, would, provided a suitable water way was in existence across the continent, beat the fastest railroad schedule time between New York and San Francisco.

APRIL PRODUCTION REPORT.

Reports were received showing the amount of stocks at 6,328 Bradford wells April 1st, and 6,367 wells May 1st. The parties who owned 6,328 wells April 1, had completed enough new ones to make the additional number May 1st. The result of these reports is shown in the following summary:

Time.	No. Wells.	Gross Stocks.	Average per Well.
April 1, 1884	6,328	429,325	67.8
May 1, 1884	6,367	403,871	63.4
Difference	39	25,454	4.4

At 6,367 Bradford wells there was a decrease of 4.4 barrels of stocks per well during April.

The number of wells in the Bradford field connected with the pipe lines May 1st is estimated at 13,145. Considering that the wells heard from show a fair average decrease in stocks for the entire field, the total reduction for April was 57,838 barrels, a daily average of 1,928 barrels. The daily average pipe line runs from wells in the Bradford field during April, by the National Transit and the Tidewater lines, were 34,370 barrels. Subtract the decrease in stocks at wells from the pipe line runs, a fair estimate on Bradford's April production, would be:

	Barrels.
Average Daily Pipe Line Runs	34,370
Average Daily Decrease of Stocks at Wells	1,928
Bradford's April production, est	32,442
do March do do	31,912
do February do do	32,378
do January do do 1884	31,806
do December do do	34,470
do Novemb'r do do	35,026
do October do do	35,654
do Septemb'r do do	34,965
do August do do	35,087
do July do do	34,530
do June do do 1883	35,279

The stock report shows that Bradford's production is holding between 32,000 and 33,000 barrels.

THE ALLEGANY FIELD.

Reports of stocks at wells in the Allegany field are tabulated as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
April 1, 1884	1,130	65,067	57.6
May 1, 1884	1,137	60,265	53.0
Difference	7	4,802	4.6

There were 3,521 wells in the Bradford field April 1st, and 3,593 May 1st. From the foregoing data the following statement is made:

Time.	No. Wells.	Average per Well.	Gross Stocks.
April 1, 1884	3,521	57.6	202,809
May 1, 1884	3,593	53.0	190,429
Difference	72	4.6	12,380

At this rate the total stocks at wells in the Allegany field decreased 12,380 barrels during April, or a daily average of 413 barrels. The average daily runs by the pipe lines during April were 12,261 barrels. Subtracting the decrease in stocks makes the production 11,848 barrels for April.

	Barrels.
Allegany's April production is estimated at	11,848
Allegany's March production is estimated at	11,768
Allegany's February production is estimated at	11,607
Allegany's January production is estimated at	11,263
Allegany's December production is estimated at	12,437
Allegany's November production is estimated at	12,678
Allegany's October production is estimated at	13,089
Allegany's September production is estimated at	12,335
Allegany's August production is estimated at	12,264
Allegany's July production is estimated at	12,345

WARREN, FOREST AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Warren, Forest and the Lower Country. The number of wells on the first of each month, with their averages, are contained in the following statement:

Field.	No. Wells. Apr. 1.	No. Wells. May 1.	Average per Well. Apr. 1.	Average per Well May 1.
Clarendon & Tiona	48	51	60	53
Cherry Grove	44	50	113	113
Cooper District	122	136	223	156
Lower Country	89	89	43	47

Stocks at 122 wells in the Cooper district were reduced 67 barrels per well. The wells from which reports were received showed a daily reduction in stocks of 201 barrels.

Accepting the outside runs as representing the production, an estimate on the yield of the field for March and April would be as follows:

Field.	March. Barrels.	April. Barrels.
Allegany	11,768	11,848
Bradford	31,912	32,442
Outside runs	19,764	19,162
Total	63,444	63,452

From all available figures, the production of the region was unchanged during April.

ASSOCIATED PRODUCERS.

Since the failure of the Producers' Protective Union there has been a gradual centralization of producing interests. From that time every year has found the business in fewer hands. To-day the large companies and a few individuals control more than one-half of the producing wells in the region. The representatives of these companies, believing that an organization would be beneficial, not only to themselves, but to the trade, have taken measures to form an organization which shall bear the name of the "Associated Producers." One of the first steps made public in this direction was the following call:

BUFFALO, N. Y., April 18, 1884.

To whom it may concern:

GENTLEMEN—We, the undersigned, desire you to attend a meeting of the representative producing companies, to be held at the office of the Union Oil Co., White building, Buffalo, N. Y., on Tuesday, April 22, at 1:30 p. m. The object of the meeting is to consider what can be done for the benefit of the producers of oil.

Please signify your intention of being present by wiring the Union Oil Co., Buffalo, not later than Monday, the 21st of April, 1884.

Very respectfully,

THE UNION OIL CO.
ANCHOR OIL CO.
RENO OIL CO.
FOREST OIL CO.

Meetings have been held in Buffalo, New York and Bradford. An executive committee of the following oil men has been appointed: J. L. McKinney, Chairman; W. H. Johnson, Secretary; W. J. Young, Jno. S. Davis, Bateman Goe, W. W. Hague, W. R. Weaver, James Amm, J. T. Jones, H. B. Porter, C. S. Whitney, F. W. Andrews, J. A. Cadwallader and John Satterfield. A sub-committee from the above has been chosen to draft a constitution and by-laws. Thus far the meetings and aims of the association have not been made public. It is understood that they will endeavor to time the movement of the drill, control the development of new territory, bring about an understanding with refiners that will elevate both the price of crude and refined, and look after the reports which go out from the test wells in the field and the statistics of the business. The time has never been more propitious for the success of such an organization as is now being perfected.

PUBLISHER'S DEPARTMENT.

The peanut crop of the United Stated is worth $2,150,000 per year.

The man who continually "gives himself away," is not always remarkable for his generosity.

Maps of the various sections of the oil field can be supplied by the publishers of the AGE on short notice.

Authors desiring to publish or book buyers wanting books on any subject can obtain full particulars by addressing Challen's Bureau of Literary Information, 744 Broadway New York.

The third volume of the AGE, begins with the February number. A title page and index to volume II will be furnished upon application.

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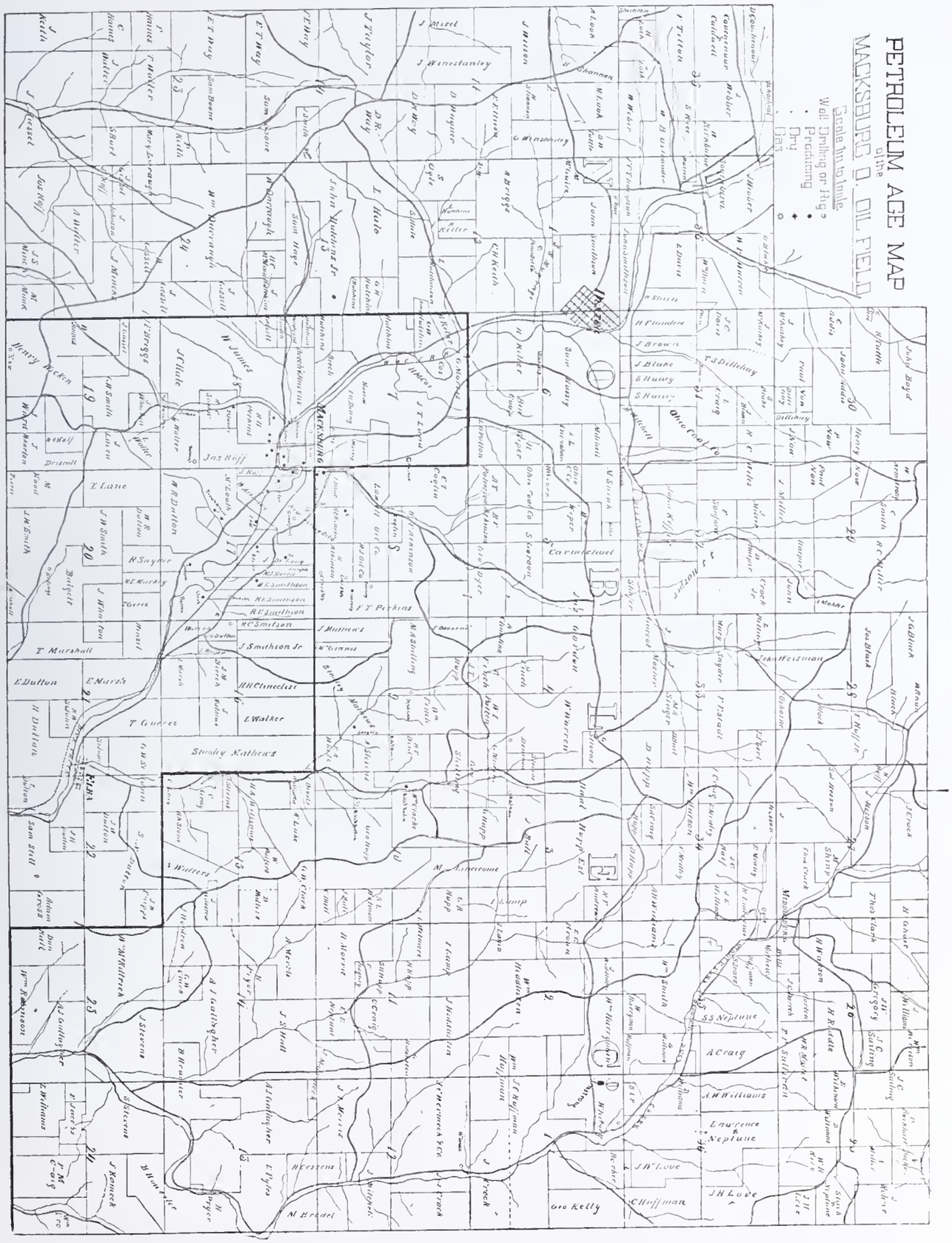
PETROLEUM AGE MAP
of the
MACKSBURG O. OIL FIELD
Scale 1in to 1mile
Well Drilling or Rig
Producing
Dry
Gas
MACKSBURG
ELBA
Stanley Mathews
Carmichael
Ohio Coal Co
Neptune
Lawrence
Neptune
J H Love
Chriffman
Geo Kelly
N Bredel
Jno S Koff
T Lane
T Marshall
E Dutton
E Walker
T Guerez
J Winestanley
J Wilson
J Brown
J Blake
S Huey
T S Dilleday
J Smithson Jr
J Matthews
W Ginnis
J T Perkins
H H Cincelist
R Snyder
W R Dutton
J Steeens
A Williams
A Craig
S S Neptune
J Steeens
A Gallagher
B Wrubber
J Kenneck
J Wilson
J Wetters
J Keith
J Hessel
J Keller
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THE PETROLEUM AGE.

Vol. III. BRADFORD, PA., JUNE, 1884. No. 5.

THE RUSSIAN OIL FIELDS.

AN ENGLISH VIEW OF THE BAKU PETROLEUM INDUSTRY.

It is singular that although the oil wells of Baku have been known for over fifty years, it is only within two or three years that they have been worked to any extent, and only within a few months that the public generally have had the fact of their existence thrust upon their attention. This condition of affairs is due to several reasons, the principal of which is that Baku is located upon a remote frontier of the Russian Empire, being separated from commercial Russia by the exalted range of the Caucasus, and having no railroad communication with the interior. Its former obscurity is due, however, more to the lack of enterprise on the part of those who undertook to work the wells than to its geographical situation; for although its location is remote as regards the market, it is situated on the shore of a great inland sea, the Caspian, and in this respect has a great advantage over our own oil producing district. The cause of Baku having been brought so unexpectedly and suddenly before the public notice is due perhaps to the fact that the wells have been brought under the control of a new management, who have no means or expense to bring the wells into the most perfect working condition, and who have had the keenness to perceive that it was not the expense in procuring and storing the oil which rendered the petroleum high priced by the time it reached the market, but the awkward facilities of transportation at that time afforded; and it has been to this that the energies of the new company have been principally directed, and in this their efforts have been rewarded with success, for Baku has been connected with the Black Sea by a partially unfinished railroad since 1881, which road was monopolized during that period by a single company. This road has recently been thrown open to the public, however, and the petroleum is now introduced into the European market at very much reduced rates, and has become a very formidable rival to its American cousin.

The mode of boring for oil is the American, modified to suit the characteristics of the Apsheron peninsula. To Messrs. Nobel Brothers belongs the credit of having introduced the composite system now in vogue, they having brought over to Baku six borers from Pennsylvania early after commencing operations in 1875.

Nobel Brothers, whose organization in almost every detail is as perfect as care can make it, lodge their employes in spacious and commodious stone barracks alongside their borings. A telephone connects their wells with the office at Baku, and again with the manager's residence in the Swedish colony that is growing up outside Baku. From Baku telegraphic communication is maintained with all parts of the world.

Boring for petroleum in the Apsheron peninsula is conducted much in the same manner as that for coal. An iron bit, gouge shaped, is fitted to a boring bar 8 feet or ten feet in length, which is successtvely fitted to other lengths as the depth of the piercing increases. The strata consists of alternate sand and rock. It is in the sand that often the greatest difficulties are encountered. A loose bowlder will meet the boring tool, and, displacing itself, leave the passage free. But when the rods are withdrawn to allow the introduction of the tubes which form the lining of the well, the bowlder falls back in its place, and baffles all attempts to continue the work. This bowlder difficulty is the great terror of those commencing to bore. The diameter of the bore is invariably from 10 inches to 14 inches. The thickness of the tubes runs from one eighth inch to three-sixteenths inch.

When the oil is touched there is usually a lengthened discharge of light carbureted hydrogen. Sometimes this pours up the pipe with terrific force, roaring so loudly that nothing can be heard alongside the well. As often as not grit is carried up with it, and finally comes the oil. Directly the gas begins to blow, all haste is made to withdraw the boring rod and fasten a *kalpak*, or iron cap, over the orifice. This is fitted with a sliding valve to regulate the passage of the gas and oil. Should the well be successfully capped over, the chief danger of an irrepressible fountain is removed, but it often happens that the oil follows too fast, and then nothing can be done to check the outburst of petroleum until

its force moderates. Last year, when the engineers at Nobel Brothers' No. 25 well struck oil, the gas exploded and blew into the air 500 feet of boring rod before it could be removed. Formerly the tubes were sunk without any packing round the top. The consequence was that when they were capped the pipes burst. To obviate this it has been the custom for some years past to dig down 20 feet or 30 feet round about the mouth of the well, and fill it up with a concrete or asphalt setting. If this be well done, it will resist the strongest pressure, in spite of a filtration through it, as occurred when the Droojba fountain was stopped last December. With but few exceptions, every care is taken by the well borers to prevent the wells becoming fountains beyond control. The Droojba catastrophe was due to an accident. The well was properly capped over, and it was while improving and strengthening the cap that the oil suddenly blew it off and spouted 300 feet high. It then became, of course, beyond control. In a few days the grit carried up with the oil ground to pieces the huge and massive beams at the top of the derrick.

Some weeks ago a report circulated in the English press that one of the oil fountains at Baku had spouted with such force as to fracture a 3-inch cast-iron plate placed over the orifice to divert the stream. This was on the face of it erroneous, the real circumstances being these: When the oil is projected, it carries with it the grit with such force as to convert its volume into a sort of liquid grindstone. If an iron plate be placed in contact with the stream, the sand in the oil literally grinds it to pieces in a few hours. The first caps that were used at the Balakhani wells were completely destroyed in this manner. Messrs. Nobel Brothers have one at their office at Baku preserved as a curiosity, which was worn into holes in a few hours, although 3 inches thick. It was this circumstance that led to the invention of a special kind of cap fitted with sliding valves. As might be imagined, when a fountain spouts as high as the Monument it forms round about the mouth of the well immense shoals of sand, which extend sometimes to the distance of a hundred yards from it. Houses are not infrequently completely buried in these mounds, and the mouths of neighboring wells covered for a time, involving heavy claims for compensation.

As soon as the oil ceases to spout, pumping is resorted to. The cylinders used are 10 feet long by 10 inches broad, and have at the bottom a valve which opens on touching the ground, and closes when the tube is lifted. About a couple of minutes are required to lower and lift the tube, which brings about fifty gallons of oil to the surface each stroke. When the supply begins to grow thin boring is again resorted to. The wells are never torpedoed, because the borers are almost sure to reach a fresh supply lower down. On attaining the surface the oil runs through wooden pipes to channels outside of the derrick, whence it makes its way to ponds. These, as often as not, are simply natural hollows in the ground with a rough sand embankment around them. After standing a while to rid itself of the sand, the oil is pumped into iron reservoirs, and then is piped to the refineries, eight or ten miles distant at Baku. Some of these ponds are so large as to merit the appellation of lakes. They often contain many million gallons, wasting their goodness on the desert air. The whole expanse of the Balakhani plateau is dotted with them.

At present there are eight pipe lines in operation conveying the oil from the wells to the refineries. The aggregate length of these is over sixty miles. They are quite a modern institution, having only been introduced by Nobel Brothers during the last few years. Previous to that, the oil used to be conveyed in barrels down the coast.

Various schemes are constantly being discussed for conveying the oil to Europe. One of these, in favor several years ago, was a pipe line a thousand miles long, to run from Baku across the Caucasus to the railway system in Southeast Russia. Another extended from Baku to the Black Sea to Poti or Batoum. This may be regarded as the most practical, and if any pipe line ever be laid down from Baku, this will inevitably be the one. At present there is a deal of talk of running a pipe line from Baku to the Persian Gulf, with the idea of securing Baku the exclusive control of the markets of Asia.

Baku is situated on a magnificent bay, with deep water close inshore. An island, lying across the mouth, serves as a breakwater, and renders the bay safe for shipping in the roughest weather. It is hardly necessary to remind the reader that the southern part of the Caspian is never frozen over, as is the case with the ports at the mouth of the Volga. From the Shakhoff peninsula to Sultan Point the Bay of Baku has an extent of nearly fourteen miles of waterside, of which more than six miles are already taken up by the Black Town, Baku itself, the quaran-

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[Errata—On page 754, the heading on The Crude Market should read The Crude Market for May, 1884.

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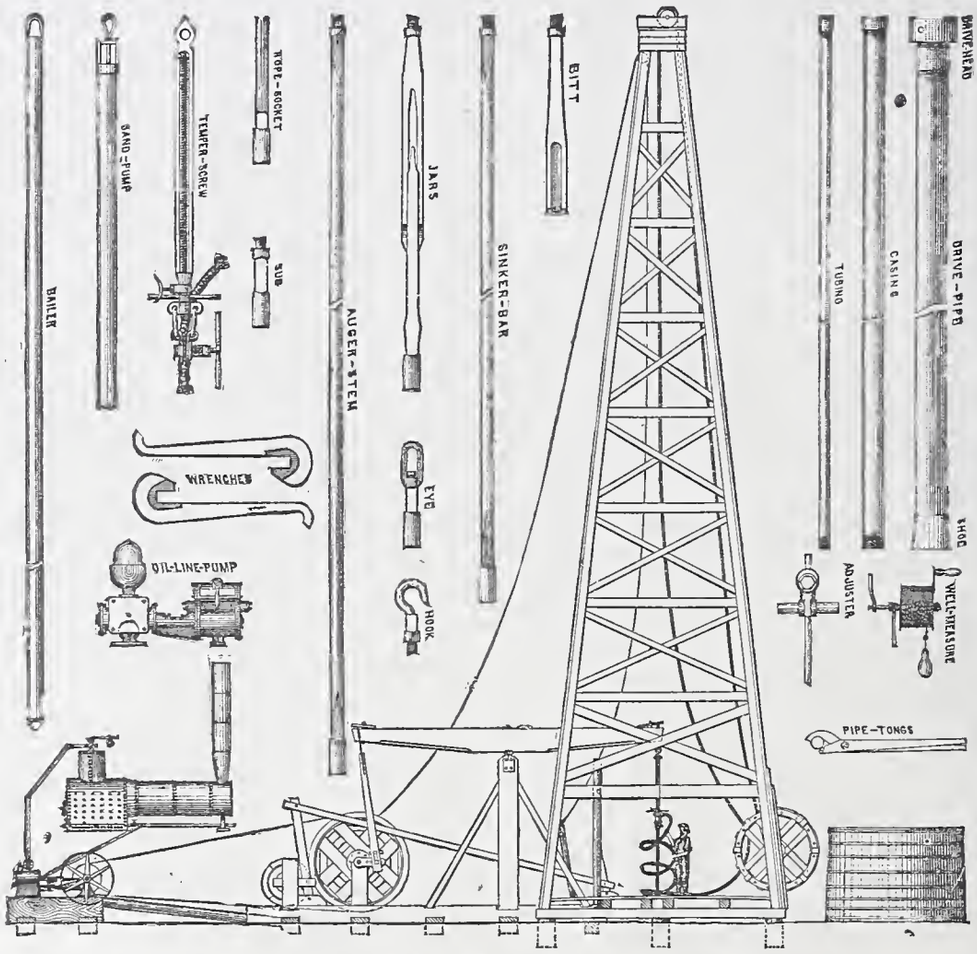

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tine port and the dockyard. The Baku section is fronted by more than a mile of limestone quaying, reminding one of the Thames embankment. Handsome buildings and well stocked shops are rising along this quay, at the back of which extend the best quarters of the town, the old Persian fortress, the municipal offices, and the numerous native bazaars. South of it is the quarantine port, with numerous piers, where the steamers unload their cargoes from the Volga and the ports of Persia. An astonishing amount of trade is transacted here. Beyond lies the handsome dockyard, a very extensive establishment more adapted for the maintenance of a regular fleet than the insignificant gunboat flotilla Russia now keeps up in the Caspian Sea. This, and the stone barracks of the garrison, etc., complete the southern side of the bay.

The northern side is taken up with the railway terminus and wharf and the 200 refineries, the latter of which form quite a town of themselves. As the name implies, the Black Town is a filthy, dirty hole, consisting of greasy stone buildings, surrounded by high stone walls and divided, the one property from the other, by regular quagmires of mud and oil. From nearly all of the refineries dense clouds of smoke rise and blacken the atmosphere. Nobel Brothers' establishment is about the last along the bay, from Baku, excluding two or three others lying some distance away from the Black Town, farther in the direction of Shakhoff Point.

From our brief description it will be seen that Baku is a very extensive town with a large population, and possesses all the resources of civilization. An idea of its shipping may be formed from the fact that 7,000 vessels enter and leave the port every year.

The distance from Baku to Astrachan, at the mouth of the Volga, is 560 miles, and from Astrachan the product is transported up the river to Tsaritzin, whence it is carried by rail to the interior of the empire.

Baku can furnish apparently inexhaustible quantities of crude petroleum at a few pence per ton, and supply kerosene, equal to the best American refined oil, for a penny a gallon. It is in this that the whole importance of the petroleum question in Russia lies. Baku has a richer supply of crude oil than America; she can turn out enormous quantities of cheap kerosene; throughout the whole of Europe the markets are in a most receptive condition for refined petroleum oil—the problem is to bridge over the chasm between Baku and the markets of Europe. If this can be cheaply and efficiently done, there can be hardly a doubt that the American oil will have a very bad time of it.

Until last year Baku was isolated from the rest of Europe; a long and troublesome journey was needed in order to get to it. Affairs have now changed; Baku is linked by steam communication with every part of Europe, and all that is required is a development of the resources of that communication to place the oil in most of the lamps of the Continent.

What may be done in this respect is indicated in the career of the great oil carriers, Nobel Brothers, the history of whose rise constitutes a most interesting chapter in the industrial progress of Russia. If we describe that career, we shall do more to show what can be done at Baku than by any amount of speculative writing.

The firm comprises three Nobels—Ludwig, Robert and Alfred—and is known in Russia under the title of Nobel Brothers Petroleum Production Company ("*Tovarishchestvo Nephtanavo Proisvodstva Bratieff Nobel*"). The father, Emanuel Nobel, was the inventor of the torpedo, the secret of which he took from Sweden to St. Petersburg in 1838 and sold to the Russian Government.

Under his supervision were manufactured those torpedoes, submarine mines, or infernal machines as they were frequently called then, which proved so troublesome to our fleet (the British) while blockading Cronstadt during its stay in the Baltic. When the war broke out Emanuel Nobel had an engineering works on the Neva, in which both his sons, Robert and Ludwig Nobel, were employed, and after they had co-operated in manufacturing and laying down the mines, they proceeded to construct engines for the large fleet of gunboats and men-of-war the Russian Government built at St. Petersburg and Cronstadt the second year of the hostilities.

This was not an easy task. Skilled labor was not obtainable in Russia at the time, and the Nobels had not only to design and supervise the construction of the engines, but also to work with and train up the men. After the cessation of naval activity at the close of the war, they built and engined nearly fifty steamers for the Volga, many of which are running to-day.

By the year 1860 the engineering works had developed into an extensive establishment—one of the largest in Russia—and in anticipation of lucrative Government contracts, Emanuel Nobel sank a considerable sum of money in still further extending it. But a period of retrenchment ensued, the promises of orders were not realized,

and in the end the firm suspended operations.

The father retired with broken fortunes and broken health to Sweden, to die there, and the prospect seemed black indeed for the three sons, although two of them are now millionaires. But if their capital was gone, they retained what was ultimately destined to rebuild their fortunes—an exceptionally vigorous and practical engineering training.

The manufacture of the submarine mines, and the laying of them down in the roadsteads of Cronstadt and Sveaborg, had taxed the ingenuity of the Nobels for months together. After the war, for years they had been engaged making steamers and machinery at a period when improvements were outracing one another, and it was no easy matter to keep apace with the times. Ludwig Nobel, in particular, enjoyed great reputation for engineering skill, and when the firm became bankrupt he was asked by the creditors to continue carrying on the works for a time as manager. Robert Nobel went to Germany, and in the course of time began to take an interest in the petroleum industry, the rapid development of which in America was then the talk of Europe. Alfred Nobel applied himself entirely to chemical pursuits, and after a while discovered dynamite, the explosive that has since revolutionized warfare and shaken thrones, and rendered him a millionaire.

Ludwig Nobel carried on the business for the creditors for a couple of years, and then, with £500 saved during the interval, began life on his own account. Establishing a small engineering works, he took a series of contracts from the Government for casting shot and shell, converting guns, and manufacturing rifle stocks, which rapidly carried him on to affiuence.

It is said that he rendered himself a millionaire exclusively through Baku petroleum. This is a mistake. When his brother Robert, enamored at what he had seen of the industry during a journey to the Caucasus in 1874, in search of walnut wood for the rifle stocks manufactured by Ludwig Nobel, urged him to co-operate in the enterprise, the latter was already worth £400,000, realized during his twelve years' operations. Aided with capital by his brother, Robert Nobel began operations as a petroleum refiner in a small way at Baku in 1875.

At that time there were more than 120 refineries at Baku, and hence he started in face of as severe a competition as any pessimist capitalist might expect to find to-day. The Swede did not concern himself, however, with concessions, subsidies, and other similar crutches dear to the heart of the company promoter. He simply settled down in an ordinary way at Baku, as any quiet, plodding capitalist might from England tomorrow, and commenced the campaign, conscious that success lay in replacing the desultory, primitive, and wasteful operations of the native firms, with the resources of engineering, chemistry, and commercial organization.

As soon as Robert Nobel began to refine the crude oil from the wells at Balakhani, he revolted against the practice of carrying the oil in barrels as being slow, wasteful, and costly. The other firms would not consent to co-operate in laying down a pipe-line, however, and Ludwig Nobel had to be applied to. For £10,000 a pipe was laid down eight miles long, from Balakhani to the Black Town of Baku, and paid its expenses the first season.

This gave Robert and Ludwig Nobel a widespread reputation at once, and by inciting other firms to do the same, laid the basis of the modern activity and enterprise at Baku. Having got their refinery in working order and a pipe-line laid down, the Nobels began to think of securing their own oil supply. Ground was purchased and borers brought from America. At first they were singularly unsuccessful, and even sought to retrieve their ill-luck by boring in the island of Tcheleken, on the opposite side of the Caspian, but ultimately their wells suddenly proved productive, and since then they have always had more crude oil on hand than they have known what to do with.

In the meanwhile a fresh problem had arisen requiring to be solved, and this brings us, after a long introduction, to our subject of distribution. When the Nobels had refined their oil, they had to send it in barrels to the Russian market, 1,000 to 2,500 miles away. This was a very inconvenient and costly mode of transport.

In the first place there was no wood in the locality to make barrels of, and to bring it from the Volga occasioned a serious expense. Barrels were so expensive that many firms purchased the empty American ones for Baku, and even then the barrel was considerably dearer and more valuable than the oil it conveyed to market.

In the second place, owing to the extreme dryness of the Caspian region half the year round, the leakage from the barrels was very great, and in the third the steamboat and railway companies exacted heavy freights for conveying the inconvenient barrels to Russia. To do away with them altogether, Nobel Brothers suggested to

the Caucasus and Mercury Company, the principal shipping company, subsidized by the State, on the Caspian, that they should fit up a steamer or two with a cistern, so that the oil might be conveyed in an unbarreled form to the river Volga. In return for doing this they offered them a lucrative contract for carrying oil for a term of years.

The Caucasus Company, however, have always been notorious for want of enterprise. Making a handsome percentage yearly by means of the State subsidy, they have no incentive to exertion. They therefore refused the offer, and compelled Nobel Brothers, in default of any other means, to decide to construct a fleet of steamers themselves.

And now were displayed the advantages they possessed over other Baku firms in owning an engineering establishment on the Neva, where steamers could be planned and built, machinery manufactured, and apparatus and appliances tested by skilled engineers before being sent to the Caspian.

With the engineer, Robert Nobel, on the spot, the engineer and financier, Ludwig Nobel, controlling operations at St. Petersburg, and the talented chemical investigator, Alfred Nobel, to refer to in chemical matters, the firm possessed advantages which rendered serious rivalry from ill-educated and apathetic Russians or Armenians impossible. In making the first steamer one or two difficulties of no mean order were encountered. The Caspian Sea is liable to sudden tempests, and it was necessary to take every precaution against the insecurity of such a shifting cargo as oil.

Wiseacres in Russia asserted, that as the gifted Americans had never deemed it feasible to bring oil to Europe in cistern steamers, it was sheer folly for any one to attempt it in the Caspian region. However, Ludwig Nobel was by birth an inventor, and he schemed out a steamer after a considerable amount of thought, in which the cargo was kept under control by an elaborate and peculiar system of water-tight compartments, without in any way interfering with the rapid loading or unloading of the vessel. The trial steamer proved a complete success.

As might have been expected, it paid for itself the first season. Having got the start the Nobels kept it up. They added to their fleet as fast as they could, getting the steamers cheaply constructed in Sweden. The profits were relatively enormous. With their steamers they beat the barrel transport so completely that the other firms had no chance against them, and as the profits were swiftly applied to extending the business, the company in a few short years became a gigantic concern.

The first "liquid transport," or "cistern steamer," appeared on the Caspian in 1879. There are now probably fifty. Nobel Brothers possess twelve—the Mahomet, Tatarin, Bramah, Spinoza, Darwin, Zoroaster, Talmud, Koran, Calmuck, etc. The dimensions of the Spinoza will give some idea of the class of steamers composing the fleet. The vessel is steel built, 245 ft. long, 27¾ ft. broad, and when laden with kerosene has a draught of 11 ft. The engines are of 120 nominal horse-power, steaming at 10 knots. They burn petroleum fuel, the bunkers containing a supply calculated to last six days, *i e.*, sufficient for the journey from Baku to the mouth of the Volga and back. The cistern hold accommodates 750 tons of kerosene each trip.

Some of the other vessels vary slightly from these dimensions. The Koran and Talmud are each 252½ ft. long and 28½ ft. broad, and carry passengers as well as oil.

Owing to the splendid canal system connecting the Neva with the Volga, very little trouble was experienced in conveying the Swedish steamers to the Caspian. In the case of the larger ones they were cut amidships to facilitate the passage; the open extremities being filled with iron bulkheads before entering the canals, and the vessel being put together again at Astrakhan.

Altogether, Nobel Brothers have sunk over £400,000 in establishing their petroleum fleet, and possess a regular dockyard at Astrakhan to repair them and the flotilla of smaller steamers on the Volga.

Directly Ludwig Nobel's cistern steamers proved a success, other firms hastened to purchase similar ones for the Caspian.

In the summer of 1882 one of these companies dispatched to the Caspian the first of a series called the Merv, constructed at Crichton's Works at Abo, in Finland. The Merv is the same kind of a vessel as the Spinoza, but somewhat smaller, being 216 ft. long, 28 ft. broad, and 9 ft. deep, possessing engines of 220 nominal horse-power, steaming at 9 knots, and having cabin accommodation for forty passengers as well as cistern holds for oil.

The Batoum, another vessel belonging to the same company, was 225 ft. long and 28 ft. broad. Rather smaller was a third steamer, the Surak-

hani, built at Abo for the Kokereff Company. This was 200 ft. long, 28 ft. broad, 9 ft. deep, steaming at 10½ knots, carrying 500 tons of oil at a trip, and costing £15,000 to construct.

In excess of these Swedish and Finnish steamers, Messrs. Mitchell & Co. have built several, and sent them from the Tyne to the Caspian Sea, chiefly for Fedoroff, Pavloff & Co., a firm that became bankrupt last year, through over speculation and mismanagement of affairs. The shipbuilders on the river Volga have also not been idle. The Rybinsk Engineering Works of Jooravieff have constructed for the Drujina Steamboat Company the Sheksna, a vessel 215 ft. long, 32 ft. broad, and 14 ft. deep, with engines of 75 nominal horse-power, steaming at eight knots and carrying over 500 tons of oil in cisterns and 25 tons in casks. These large steamers have all been utilized for the Caspian transport service.

The mouth of the Volga is too shallow to allow of the passage of steamers of large draught. Following the old practice of the passenger and cargo vessels, the oil is sent in these large steamers to the 9 ft. shallows at the mouth of the Volga. Here the oil is pumped into light-draught cistern steamers, or into large barges, and tugged up the river. This has involved the formation of a second flotilla.

The vessels of this flotilla range in size from 60 ft. to 150 ft., and convey the oil from the 9 ft. shallows to Tsaritzin, the first railway point on the river Volga. Nobel brothers have about a dozen such vessels, costing £6,000 or so apiece, besides 11 iron tanks, barges for kerosene, four wooden ones fitted with 128 iron tanks, and 28 wooden barges for the liquid fuel.

Thanks to these vessels, the oil can be conveyed from Baku to Tsaritzin with wonderful rapidity. From the storage reservoirs at the refinery at Baku, the kerosene descends by its own gravity to the head of the pier on the bay, and pours into the cistern steamer at the rate of 100 tons per hour. The steamer then proceeds to the mouth of the Volga, pumps the oil into the barges, and returns again with water ballast, the journey there and back being done in 4½ days. Water being scarce at Baku, and in fact more precious than oil, it is pumped from the steamer into reservoirs, and is either used at the refinery, or for irrigating Villa Petrolia, the park which Ludwig Nobel is having laid out for his employes on the shore of the bay a short distance northeast of the refinery.

In the meanwhile, the smaller steamers run the oil up the Volga to Tsaritzin in a couple of days, and pump it into the reservoirs for storage alongside the railway, from which it is ultimately sent to every part of the Russian railway system and to Middle and Western Europe.

The employment of these cistern steamers in the place of barrels has wonderfully cheapened the price of oil in Russia, and given an impetus to the trade which this year is to be met by the addition of nearly a score of new steamers to the Caspian oil trade, of which fifteen will be from Sweden. All these oil steamers burn nothing but petroleum fuel, and considering the character of their cargo, it is obvious that if for years past thousands of voyages have been performed by steamers laden with kerosene, with perfect immunity from fire, liquid fuel can be safely employed on other and ordinary vessels, having less combustible cargoes on board. The employment of oil fuel in the Caspian is no new thing, although Europe is only now beginning to discuss the merits of it.

The steamers began to burn it a dozen years ago, and the fuel has proved its excellence to such a degree that at present there is not a vessel on the Caspian using wood or coal. General Valentine Baker, who traversed the Caspian in 1872, predicted even then, with his accustomed sagacity, a great future for it. In his "Clouds in the East" he says: "The fuel is not highly inflammable, and its use seems perfectly safe and under control. Vessels originally fitted for burning coal can burn this liquid fuel with very little alteration. One stoker is sufficient for a large steamer. All the engineers of vessels burning petroleum speak in the highest terms of the fuel."

Since he visited the Caspian, Mr. Arthur Arnold, M. P., Colonel Stewart, Mr. O'Donovan, Consul Peacock, and a number of other Englishmen of greater and lesser note have seen these steamers at work on the sea, and all have spoken in terms of unqualified praise of liquid fuel. But perhaps the most satisfactory testimony is afforded by the fact that the use of the oil is becoming common even in the higher part of the Volga, where wood is tolerably plentiful. Altogether, probably not less than 300 steamers on the Volga and Caspian burn nothing but oil fuel to-day. Various kinds of pulverizers are used, the general principle being to mingle the oil refuse with a jet of steam and inject it into the furnace in the form of spray, where it makes a powerful and steady blaze.

The advantages of the fuel are such as to ren-

der competition on the part of wood or coal hopeless. To start with, one ton of oil refuse will do the work of two tons of coal even in the most wasteful apparatus in use on the Caspian, and of three tons in the more perfect Walker furnace. Less fuel being required, and the oil further taking up, weight for weight, less room than coal, a greater amount of space is available for cargo. Then no stoking is required, one man being sufficient to look after all the furnaces; the fuel is smokeless, a very important consideration for vessels of war; there is no banking of fires, the flame being turned on and off like an ordinary gas jet; and finally, the fire can be regulated to any degree of intensity by simply adjusting the injector.

In the case of the vessels running from Baku to the mouth of the Volga, the engineers turn on the flame in starting, and concern themselves no more about their fires until they get to their destination in two days' time. The experience of a dozen years has rendered the Russian Admiralty so satisfied with liquid fuel, as used on board the ten or twelve steamers and gunboats of the Caspian fleet, that it has recently taken steps to fit up one or two vessels in the Black Sea to burn the oil refuse. Thanks to the railway connecting Batoum with Baku, it can transport to the Black Sea more than sufficient liquid fuel to render its fleet there independent of English coal.

Measures are already being undertaken to carry this into effect. The Minister of Marine, who recently visited Baku, has arranged for the Caspian fleet to be combined with that of the Black Sea, and the liquid fuel resources of the Baku dockyard to be placed at the disposal of the naval authorities at Sevastapol and Nicolaeff. In this manner, we shall probably see a number of vessels using liquid fuel in the Black Sea in a few years' time, and once the supply of oil fuel becomes abundant and cheap at Batoum, it must prove a formidable competitor with English mineral fuel in the Mediterranean, Egypt, and the East.—*Engineering.*

MACKSBURG MELANGE.

The season in Macksburg is about one month ahead of Bradford. On the 5th of May the lilac was in bloom, the apple blossoms were falling, and every passing breeze which fanned the pedestrian on the Macksburg hills was freighted with the perfume of flowers. The weather grows warm early and all visitors from Bradford's cool climate return well bronzed by Macksburg's wind and sun.

The hills and valleys of the Ohio oil field are dotted everywhere by log houses about twenty feet square and twenty-five feet high. They look like miniature block houses and might lead a stranger to believe that at some time in the past the country had been in a state of seige. A few years ago they served a useful purpose in drying tobacco. In 1873 Noble county produced 5,639,653 pounds of tobacco, giving it the rank of second in the State in the yield of that product. The home product of the weed is made into twists about six inches long, and finds a ready sale under the appropriate name of "wring jaw." For some reason the tobacco plant no longer helps to make a green carpeting for the hills and valleys in the summer, and the hundreds of drying houses are unoccupied throughout the year. There are fields of growing grain and pasture lands where this plant of filth and luxury formerly throve. Though the region is hilly there is but little wood-land, and it may be considered a well cultivated country.

The sand found at the 1500 feet level and the one upon which the hopes of Macksburg's future are based is a white sand, resembling in color and texture that found in the Stoneham field. These are the characteristics of the specimens easily obtained from the old wells on the Duck Creek flats. Eastward, at the Laing and Mills & Mullin wells, a change is reported in the texture of the rock. At these wells it is said to be coarse and similar to the third sand of Butler county. At the present writing there is a premium on samples of the oil-bearing rock from the two wells mentioned, and outsiders have been obliged to secure specimens through means which do not always insure absolutely reliable results. When a few more wells are down Macksburg sand will not be so rare, and consequently its properties will soon be better understood.

A cap of black sand is found on top of the deep sand. This varies from one foot to four in thickness, and usually contains the gas. It is quite a sure guide in shutting down on top of the sand.

The fifteen hundred foot sand is found on the low ground along Duck Creek, between 1450 and 1500 feet. As the summits of some of the hills are 400 feet above the valleys, the oil-bearing sand will be found on the highest ground 1900 feet below the surface.

The time required to drill a well varies from 30 to 60 days. Drillers from the Pennsylvania region find it tedious work "wrestling" with the

cave rock and gradually quicken their time as they gain an experience in the section. The McManus No 3, on the Roff, was drilled "dry" in 35 days. His No. 1, on the same farm, was finished "dry" in 40 days. It costs about 65 cents per foot to drill a well when the salt water, which is struck at 900 feet on the flats, is cased off. When a "wet hole" is drilled the contractor is paid one dollar per foot.

The mud veins or "caves" are the source of more delay and annoyance than the salt water or any other objectionable feature which the field presents. On the high ground the material of which they are composed softens under the action of water and runs in around the tools. Sometimes it falls in chunks or lumps into the well, and the drill may pound all day without making any headway. It seems like drilling on so much putty. To pass these veins of mud it is thought expedient to use different sizes of large casing or pipe. Where several layers of the cave are found a ten-inch hole would be drilled below the first and a smaller one lower down.

Salt water, once the bane of producers in the oil regions, "is held in contempt by the native operators." But the saline element is now used for tamping in the Glade district at Warren. Three or four hundred feet of water is run into a well with a barrel of salt. After the salt has dissolved the well is torpedoed with beneficial results. The white pebble sand, which is struck at a depth of 900 feet on the Macksburg flats, has a thickness of 200 feet. This is so saturated with brine that the hole is filled with the fluid to the top, and when the tools are lowered it runs over on the derrick floor. The Jaquay well on the Snyder farm flowed salt water over the top of the derrick for three days from the 300 feet sand. It is now practically demonstrated that the best results from torpedoing are obtained with a column of salt water standing on the rock. It is packed off and then there is no trouble in keeping the wells flowing. Where the territory is closely drilled and the pressure of gas has weakened, it is a question if the salt water will not prove very troublesome and damaging to the country.

A sample of oil from Decker's No. 4 well, near the railroad "Y.," tested by an AGE representative, showed a gravity of 41°. The hydrometer when placed in oil from Rice's No. 13, a shallow well, registered 42°. The oil from the "1500-foot rock" resembles that produced at the southwest end of the Cherry Grove belt in color. It is a dark green oil with an amber tinge. The oil from the shallow sand is black and has a hue about like that of the Boyle well north of the Richburg field.

The Union Oil Co., Denman & Co., Laing & Co., and Mills & Mullin have the majority of the lands northeast of the old development under lease or contract. In some instances an option of five dollars per acre is paid for the privilege of buying a farm within one year or eighteen months at one hundred dollars per acre. A rental is paid on some leased farms until operations are begun. Nearly all lands have been secured upon terms which will enable them to be operated at a slow pace. Already speculators have been through the county buying the royalty of the farmers who have leased their lands. Before the late excitement over oil, lands were worth from $30 to $50 per acre for farming purposes.

Five wells now drilling or projected at this writing, May 5th, will have much to do with shaping the outlines of the Macksburg field. The Denman well, on the Warren farm, three-quarters of a mile northwest of the Mills & Mullin well is drilling below the salt water sand, and can be finished before the June issue of the AGE. The Union Oil Co.'s well on the Neptune farm, southeast of Middleburg and two miles northeast of the Denman venture, will tell the story in a positive manner concerning a belt to the northeast. D. W. Clark & Co.'s test on the Armstrong farm, and McDonald's well further down the Middle Branch of Duck creek, with the Union Oil Co.'s experiment on the Morris farm, three miles due east of Macksburg, cover a fan-shaped section of country east and northeast of the old development with the handle at Macksburg. When it is clearly demonstrated that the large wells draw their oil from a white pebble sand, as it is now claimed by practical men of experience, then a conclusion can be based on the precedents of the past that the field will have a limited area.

THE WESTINGHOUSE GAS WELL.

The growing interest which has been manifested in the subject of "natural gas" since the first piping of the Murraysville calorific to Pittsburgh received a powerful impetus in the striking of the Westinghouse well. This well is situated on the property of George Westinghouse, at Homewood station, on the P. R. R., about six miles from Pittsburgh. The well was declared down on the 21st of May, and made the

showing of a very fair well. On the morning of the 29th the tools were again lowered, and after the drill had run three feet a terrific flow of gas put an end to further operations. At the time this vein was opened the well held about 400 feet of water. All of this was blown instantly out carrying away the crown pulley and destroying the top of the derrick. The tools were found by your correspondent outside the derrick, but not in shape to give color to the rumor that they had been blown from the well. The depth of the well, as given by the contractor, Mr. Gillespie, is 1,575 feet. The sample of sand shown has a fine showing of pebbles, and was pronounced equal to that of the Murraysville wells. There is much excitement over this strike, as the territory opened is in the very heart of the finest part of Pittsburgh. The gas is pronounced similar in quality to the Murraysville gas, being about ninety-five per cent. marsh gas and almost odorless.

The well is located directly back of the residence of Mr. Westinghouse, and was sunk as a private venture, merely to obtain a sufficient supply of gas to light the Westinghouse mansion, but from all indications the amount is sufficient to light the city. It is a great roarer, and the heavy rumble of the escaping gas can be heard distinctly above all other sounds for a great distance. Directly at the well it is simply deafening. Crowds of curious sight-seers have been attracted to the spot, and the entire community seems to have gone mad on the subject of natural gas.

At exactly 8 o'clock Saturday evening, June 2d, Mr. T. A. Gillespie, under whose personal supervision the well has been constructed, gave the order for the first time to apply the torch at the mouth of the well, and the operation has been repeated at the same time every evening since. A wire is run from the top of the derrick to the earth some distance away, and upon this the torch is slowly pulled up, while a multitude of spectators stand in breathless expectation. The flame touches the top of the pipe and rolls around it a moment as though coquetting with the invisible power. Then, with the sound of a sudden sullen clap of thunder, an immense flame leaps 75 feet into the air and the landscape, previously obscured by the gathering shadows, stands out strangely defined in its most minute details for miles around.

When the gas was lighted for the first time, a large crowd gathered to witness the ceremony, but the sudden turning of night into day, paling the lamps and gas lights in houses a mile away, created the greatest excitement and a stampede set in toward the source of the great light, great numbers of vehicles and pedestrians being attracted toward it from all quarters until after midnight, and the pilgrimage of the curious continues from day to day. The flame leaps from the top of the derrick into the clouds like a great fiery plume, blue at the base, white in the center and red at the extremity, and is accompanied by a roar like that of a minature Niagara. It is possible to read by its light almost a mile away.

Mr. Walter Jarboe, an engineering authority on natural gas, estimates that computing coal at the low rate of five cents a bushel, the gas at this well is worth eight cents a thousand feet, and that a day's production amounts to $1,200. This makes the gas escaping equivalent to 24,000 bushels of coal a day.

The gas is turned off at midnight in order to give the people in the neighborhood a chance to sleep. It will be conveyed a distance from the well in pipes, so that the noise and great heat will soon be done away. Mr. Westinghouse will put down three more wells immediately.

Several of the gas companies have been negotiating with Mr. Westinghouse for the well, but none of them have yet secured it. It is reported that the owner is making the necessary arrangements to lead it to manufacturers in the city through cast iron pipe, and that he has secured right of way along the Pennsylvania railroad tracks for that purpose.

Heretofore the Murraysville wells were the nearest that had been developed in the vicinity of Pittsburgh. Several wells have been drilled in Shaler township, at Four Mile run, Carpenter's station and other adjoining points, but all of them proved dry holes. Murraysville is located sixteen miles from the city, while the Westinghouse well is only six miles away. The fact that the Edgar Thomson Steel Works, Wilson, Walker & Co., the Union Iron Mills, the Black Diamond Steel Works, T. Campbell & Co., Cunningham & Co., Wamhoff & Co., S. McKee & Co., Oliver Bros. & Roberts, the American Iron Works and other large manufacturers are using natural gas for heating purposes, shows its great value as a fuel, and it is argued that the difference in the cost of laying pipes from Homewood to the city, as compared with other points where natural gas has been found, will prove no small item.

RELIABLE maps for sale at the AGE office.

THE REFINED MARKET.

In striking contrast with the course of the crude market, the price of refined maintained a fair degree of strength throughout the month. Up to the middle of the month there was a good demand for refined from abroad, owing to the low rates for ocean freight and the steadily decreasing supply of stocks in the principal foreign ports. A fair business was done on a basis of 8¾ cents for 70 degree Abel test, for May and June delivery. The rapid decline in the price of crude caused an insecure feeling on the part of the purchasers of refined and during the last half of the month very little new business was done. Refiners lowered their price on 70 degree Abel test to 8⅜ cents for June delivery, while the tone of the foreign markets remained remarkably steady. The subsequent financial depression reduced prices another quarter of a cent, but it was followed by a sharp reaction to 8¼, and the month closed fairly firm at the last quotation.

Refined in cases was in active demand toward the close of the month, especially for the Mediterranean and East Indian ports, at 9½ to 9¾ cents per gallon. The demand for naphtha has been moderate, but the figure has remained at about 7½ cents for the plain brands. Refined for domestic use ruled very quiet for the month, but the prices have been maintained with a considerable degree of steadiness.

In London the closing prices May 30 for American refined were, spot 6¼d to 6$\frac{9}{16}$d, June delivery 6$\frac{5}{16}$d to 6⅜, last four months of the year 6⅝d to 6¾d. The same date last year refined was quoted at 6⅛ to 6$\frac{5}{16}$d.

		New York.	Philadelphia.	Baltimore . .	London and Liverpool . .	Bremen . . .	Antwerp . .
		Cts.	Cts.	Cts.	Pence.	Marks.	Francs
T	1	8¾	8½	8⅝	6½	7 65	19
F	2	8¾	8½	8⅜	6½	7 65	19
S	3	8¾	8½	8⅜	6½	7 65	19¼
M	5	8¾	8½	8⅜	6½	7 65	19¼
T	6	8¾	8½	8⅜	6½	7 65	19¼
W	7	8¾	8½	8⅜	6½	7 65	19¼
T	8	8¾	8½	8⅜	6½	7 65	19¼
F	9	8¾	8½	8⅜	6½	7 60	19
S	10	8¾	8½	8⅜	6½	7 60	19
M	12	8¾	8½	8⅜	6½	7 60	19
T	13	8⅝	8¼	8¼	6½	7 45	18¾
W	14	8⅝	8¼	8½	6½	7 45	18¾
T	15	8⅜	8	8	6½	7 30	18½
F	16	8⅜	8	8	6½	7 30	18½
S	17	8⅜	8	8	6⅜	7 40	18¾
M	19	8½	8	8	6⅜	7 55	18¾
T	20	8½	8	8	6⅜	7 60	18¾
W	21	8¼	7⅞	7⅞	6	7 50	18¾
T	22	8⅜	7⅞	7⅞	6⅜	7 60	18¾
F	23	8⅜	7⅞	7⅞	6⅜	7 55	18¾
S	24	8⅜	7⅞	7⅞	6⅜	7 55	18¾
M	26	8¼	7⅞	7⅞	6⅜	7 55	18¾
T	27	8¼	7⅞	7⅞	6⅜	7 45	18½
W	28	8¼	8	8	6⅜	7 45	18½
T	29	8¼	8	8	6⅜	7 40	18½
F	30	8¼	8	8	6⅜	7 40	18½
S	31	8¼	8	8	6⅜	7 40	18½

CRUDE MARKET FOR MAY.

The month of May was a memorable one in the annals of crude petroleum. In many respects it resembled the notable November of the fall of 1882. The drop in prices did not cover so wide a range, but its effects were almost as widespread and disastrous. The sudden decline witnessed last month was not occasioned by any of the circumstances that follow the opening up of new territory and the discovery of enormous fountains of crude. It is true there were dark clouds above the southwestern horizon in the direction of Macksburg, and a very promising well was brought in at Wardwell, but these were of small importance when compared with the flurry that took place in Wall street. Petroleum followed in the wake of the speculative stock market, and the reasons for the drop from 103½ to 65 cents in less than ten days, are purely financial.

The failure of the Marine bank and Grant & Ward occurred on the 6th of the month, and the price of crude dropped six cents the same day. It showed no signs of a speedy recovery, and slowly sagged off towards ninety cents. On the 14th, the day of the great panic in Wall street, the market opened quietly at 91⅝ and went down to 81 cents amid great excitement. The second day after the panic it sold down to 76 cents, and the third day down to 65. After this price had been reached a reaction took place that carried the market up to 81½. It afterwards sold down to 70 cents, and the month closed with prices tolerably steady at 77½ cents. The downfall of the Penn bank at Pittsburgh, the embarrassments of James H. Keene, the failure of the New York Metropolitan bank, of Fisk & Hatch, Hatch & Foote, Dimmick & Co., and other firms whose reliability had been unimpeached and unquestioned, threatened at one time to ruin and destroy the entire speculative business in petroleum. There was a general feeling of insecurity and lack of confidence. The banks refused to make any loans on the best securities that could be offered, and the carrying rates on oil advanced to ruinous prices. In New York $3, $5 and $10 per diem, and in some cases even $20 was paid.

During the height of the excitement prices in the New York exchanges ruled lower than at any other point, and as a natural result there were large purchases for the outside exchanges. When the banks refused to receive the oil certificates it was impossible for buyers to take the oil and make their deliveries. At this point the

Standard Oil Company came to the rescue, and by freely taking the certificates at the prices at which they were sold and paying for them bridged over the difficulties and prevented another break that was imminent.

From the highest to the lowest point in May there is a decline of 38 cents, and 65 cents is the lowest price reached by oil certificates since the summer of 1882, when the Cherry Grove field was discovered.

The stormy scenes through which all interested in the oil market have passed have rendered operators more than ordinarily cautious. As a result trading has been comparatively light and the general disposition has been to curtail and retrench. The amount of business transacted has fallen off considerably, as is shown by the following table of clearances:

THE CLEARANCES.

	May. Barrels.	April. Barrels.
Bradford Oil Exchange	151.252,000	196,168,000
Bradford Prod. Pet	32,924,000	52,400,000
Oil City	236,628,000	269,054,000
New York, N. Y. Pet	272,052,000	302,752,000
New York, National	303,868,000	342,031,000
Pittsburgh Oil (old)	11,000,000	152,636,000
Pittsburgh Petroleum (new)	190,085,000	.....
Total	1,197,809,000	1,315,041,000

THE OIL SANDS OF MACKSBURG.

BY F. W. MINSHALL.

Dr. I. S. Newberry, in his report on the geology of Ohio, says: "In Ohio dry wells have proved to be the almost universal rule, and none of the wells yet bored have opened reservoirs from which oil has been obtained in paying quantities." He accounts for the absence of productive fields in that State as follows: Having traced the oil-bearing sands of Venango county, Pennsylvania, westward into northern Ohio, he found them thinning out westward and being replaced by shales, until, along the lake shore in northern Ohio, the Chemung group of Pennsylvania was represented by about 600 feet of what he calls Erie shale, lying directly upon the black bituminous shales called Huron in Ohio, Portage and Genesee in Pennsylvania. These Erie shales contain no sand-rocks capable of holding a store of petroleum. Starting, then, at the lake shore and running south, he finds these Erie shales thinning out, until in southern Ohio they have almost disappeared, leaving the sub-carboniferous or Waverly group resting upon the Huron shales. Dr. Newberry assumes these Huron shales and their Pennsylvania equivalents to be the source of the petroleum, the conglomerates of the Chemung being simply points of accumulation. The oil-bearing shales are found to be persistent and of good thickness in Ohio, but the overlying conglomerates of the Chemung having disappeared, it is somewhat hastily inferred that Ohio possesses no oil territory from lack of suitable sand-rocks to serve as points of accumulation.

The Macksburg oil field in the northern end of Washington and southern end of Noble counties is chiefly valuable as an illustration of the point in question. The amount of oil produced is really insignificant, but the number of sand-rocks from which it has been obtained within the narrow limits of the field during the last twenty years may be cited as conclusive evidence that some other cause than lack of suitable storage rock must be given for the absence of profitable territory.

In southern Ohio there are five well-marked pebble sand-rocks above the horizon of the Huron shale, all of which, except the upper one have yielded oil in paying quantities. At Macksburg the upper one of the series lies at the base of the upper barren coal measures, from 250 to 300 feet above the bed of Duck creek. The second, commonly called the Mahoning sandstone, lies about 140 feet below the bed of the creek, and has yielded large quantities of petroleum. The third is a lower coal measure sandstone, 500 feet below the bed of the creek; this has also been a good producing sand, both at Macksburg and at Cow run, in Washington county. The fourth is the great conglomerate at the base of the coal measures; this is filled with brine at Macksburg, but has been the chief oil-bearing sand of White Oak and Burning Springs in West Virginia. The fifth is the equivalent of the Berea sand-stone as given in Dr. Newberry's Waverly Group of northern Ohio. It lies about 1,425 feet below the bed of Duck creek at Macksburg, and is now the chief producing rock of the district, those lying nearer the surface having been exhausted by twenty years pumping.

This No. 5 is the lowest sand-rock from which petroleum has thus far been obtained in Ohio and West Virginia. Its position is about 1,350 feet below the crinoidal limestone of the lower barren coal measures, or 350 feet below the bottom of the great conglomerate in Ohio. In West Virginia the intervening strata are a little thicker, being respectively 1,450 feet and 400 feet. So far as it has been worked it has proved rather light, starting at about 25 or 30 barrels per day and soon running down to 5 or 10 barrels. Assuming Dr. Newberry's views concerning the Huron shale to be correct, about one-

fourth of the State, lying in the southeastern corner, would present conditions favorable for the accumulation of petroleum wherever "the strata have felt the disturbing influence of the forces which raised the Alleghany Mountain" (Ohio rep. vol. 1, p. 160). In seeking for evidence of such "disturbing influence" to account for the accumulation of oil in the Macksburg sand-rocks, the writer has noted a few facts which seem to have some bearing upon the case. A line drawn from Wheeling, West Virginia, to Pomeroy, Ohio, would represent in a measure the general course of the Ohio river, and also the longer axis of this part of the Alleghany coal basin. A second line drawn from Marietta to Zanesville, Ohio, would make, with the first line, very nearly a right angle. At Marietta the bottom of the conglomerate at the base of the coal measures is 1,500 feet below the bed of the Ohio river; at Zanesville it is above the level of the Muskingum river. This rise of the strata at a right angle to the axis is not continuous; the average rise would be something near 25 feet per mile, but at some points it is as high as 60 feet to the mile, at others nothing, leaving terraces running parallel with the longer axis of the basin. At other points a slight reverse dip forms a low anti-clinal. The Macksburg oil field lies upon a terrace of the kind mentioned, between one and two miles in width; its general course is about northeast and southwest; its exact course can easily be determined by running a line through the points at which the surface rocks leave the level and begin dipping to the southeast. These facts are simply offered as evidence of the "disturbing influence" mentioned by Dr. Newberry, and if the production of the district shall follow the line of terrace as closely in the future as it has in the past, the geologist will be warranted in assuming that the position of the rocks is one among many causes for the accumulation of petroleum in every pebble sand rock lying between the summit and the base of the coal measures.—*O. P. and D. Reporter.*

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to June 7, for the years 1883, 1884, were as follows:

	1884. Gallons.	1883. Gallons.
From Boston	2,539,531	2,317,368
Philadelphia	29,259,839	26,822,439
Baltimore	4,313,324	5,021,315
Richmond	....	173,449
Total	36,112,694	34,334,571
From New York	149,600,289	176,448,445
Total exports from United States	185,712,983	210,783,016

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to June 11th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
Great Britain.—London	4,453,147	19,297,760
Liverpool	853,742	3,367,003
Bristol	390,780	928,695
Ireland	1,110,270	2,232,064
Other ports	2,257,260	2,999,082
Germany—Bremen	17,032,080	23,624,650
Hamburg	16,161,972	18,984,169
Konigsburg and Stettin	1,939,158	880,977
Dantzic	....	....
Other Ports	580,329	256,073
France—Marseilles	....	....
Havre	....	....
Norway and Sweden	1,877,272	3,140,472
Russia	....	828,993
Denmark	3,596,284	3,984,253
Belgium	13,243,260	16,462,730
Holland	10,086,253	7,138,611
Spain	79,000	40,770
Portugal	351,718	770,166
Gibraltar and Malta	2,368,560	545,250
Italy	619,939	997,138
Austria.—Trieste, etc	1,633,896	3,525,904
Greece	....	216,300
Turkey in Europe	662,420	635,311
Turkey in Asia	909,980	1,079,070
India	11,531,820	5,254,050
China, Japan, etc	10,754,190	13,641,090
East Indies	11,725,210	14,513,730
Africa.—Alexandria, etc. E	632,660	1,275,710
Canary Islands	39,000	63,145
Other Ports	1,010,382	2,087,473
Australia	965,129	865,428
New Zealand	340,608	205,520
Sandwich Islands	175,100	42,500
South America.—Brazil	1,777,879	2,143,682
Argentine Confederation	1,271,270	1,370,290
Chili and Peru	232,242	879,000
U. S. Columbia	204,879	104,784
Venezuela	277,295	280,146
Other Ports	29,300	102,461
Central America	122,931	76,406
Mexico	588,730	595,159
British North American Colonies	320,126	239,783
Cuba	278,131	128,334
British West Indies and Br. Guiana	748,489	847,717
Other West Indies	563,985	452,442
Total . . . Galls.	123,787,676	157,104,291

CRUDE.

	1884.	1883.
France.—Havre	3,746,653	2,673,910
Marseilles	1,750,052	1,208,709
Bordeaux	766,369	967,518
Dunkirk	2,612,664	2,850,188
Other Ports	3,416,243	1,896,153
Antwerp	....	....
Bremen	....	383,452
Norway and Sweden	....	62,374
Spain	5,786,689	4,406,312
Cuba	1,489,183	1,102,087
Other Ports	3,555,915	1,251,312
Total . . . Galls.	23,123,768	16,802,015

NAPHTHA.

	1884.	1883.
Great Britain	1,247,966	1,838,312
France	564,088	1,042,888
Germany	347,565	1,106,979
Other Europe	451,887	1,175,625
Various Ports	77,339	43,345
Total . . . Galls.	2,688,845	5,207,149

RESIDUUM.

	1884.	1883.
To all Ports	1,458,625	3,341,155

	Gallons.
Total Refined since January 1, actual shipments	126,445,198
do do do do crude equivalent	168,593,597
do Crude do do actual shipments	23,335,772
Grand Total Crude and Crude equivalent . . . . galls.	191,929,369
Same time, 1883	226,274,403

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, June 11, 1884:

Ports.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	36	35	16	1	1	89
Philadelphia	17	5	.	.	.	22
Baltimore	7	.	.	.	.	7
Boston	.	.	.	.	.	.
Total June 11	60	40	16	1	1	118
Total May 10	73	32	17	4	1	127
Difference	13	8	1	3	0	9

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590
April, 1884	34,370	12,261	19,162	65,793
May, 1884	34,946	12,193	19,549	66,688

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for May, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of May		2,594,333.84
Quantity of crude petroleum at close of May	2,723,343.80	
Less sediment and surplus	155,675.00	
		2,567,668.80
Receipts during May		303,046.74
Deliveries during May—to refiners	189,066.04	
" " " —to other parties	149,446.56	
		338,512.60
Outstanding certificates, accepted orders, etc		1,976,000.00
Credit balances		591,668.80
Total liabilities May 31, 1884		2,567,668.80

APRIL SUMMARY.

		Barrels.
Quantity of crude petroleum in custody at beginning of April		2,572,458.84
Quantity of crude petroleum at close of April	2,749,570.23	
Less sediment and surplus	155,236.39	2,594,333.84
Receipts during April		297,473.86
Deliveries during April		275,028.79
Outstanding certificates, accepted orders, etc		2,113,000.00
Credit balances		481,333.84
Total liabilities April 30, 1884		2,594,333.84

SUMMARY of the statements of the National Transit Co,. for April and May, 1884.

	MAY.	APRIL.
Receipts from all sources	2,150,316.08	34,922,397.44
Deliveries	1,543,756.82	1,347,997.46
Gross stocks end of month	38,236,941.00	37,426,125.20
Sediment and surplus	2,595,055.49	2,380,048.52
Total liabilities end of month	35,641,885.51	35,046,076.68
Outstanding acceptances	29,285,000.00	28,390,000.00
Credit balances	6,356,885.51	6,656,076.68

The above receipts from all sources for May were made up as follows:

Transferred from United Pipe Line as reported to N. F. Hilton. representihg Conference of Oil Exchanges	267,744.44	
Less sediment and surplus	8,922.45	
Net amount from United Pipe Lines		258,821.99
Runs from wells		1,742,047.53
Received in iron tanks		149,446.56
Total		2,150,316.08

The above receipts from all sources for April were made up as follows:

Transferred from United Pipe Lines, as reported to N. F. Hilton, Esq., representing the Conference of Oil Exchanges	35,296,006.79
Less sediment and surplus	2,168,617.14
Net amount from United Pipe Lines	33,127,389.65
Runs from wells	1,652,604.73
Received in iron tanks	142,403.06
Total barrels	34,922,397.44

RUNS, SHIPMENTS AND STOCKS.

RUNS OR RECEIPTS.

PIPE LINE.	MAY, 1884.	APR., 1884.
National Transit Co	1,742,047.53	1,652,604.73
Tidewater	303,046.74	297,473.86
Octave Oil Co	3,122.28	2,767.79
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	7,053.44	7,485.99
Cranberry Pipe Line	12,048.85	13,478.02
Total	2,067,318.84	1,973,810.39
Daily average	66,687.70	65,793.68

In the above runs for May and April only the oil received by the National Transit Co. directly from the wells, is included.

DELIVERIES OR SHIPMENTS.

PIPE LINE.	MAY, 1884.	APR. 1884.
National Transit Co	1,543,756.82	1,347,997.46
Tidewater	189,066.04	275,028.79
Octave Oil Co	3,678.97	3,340.57
Charley Run	173.06	.....
Shaffer Run	173.00	.....
Franklin (limited)	3,008.97	3,394 60
Cranberry Pipe Line	10,025.80	13,512.40
Total	1,749,882.66	1,643,183.82
Daily average shipments	56,447.82	54,772.79

In the above shipments for May only the oil delilvered to refiners is included.

Daily excess of runs over shipments, May, 1884	10,239.88
Daily excess of runs over shipments, April, 1884	11,020.89
Daily excess of runs over shipments, March, 1884	4,144.98
Daily exeess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

PIPE LINE.	MAY 31, 1884.	APR 30, 1884.
National Transit Co	35,641,885.51	35,046,076.68
Tidewater	2,567,668.80	2,594,333.84
Octave Oil Co	11,008.43	7,419.29
Charley Run	3,717.00	3,986.81
Shaffer Run	30,636,32	28,052.75
Franklin (limited)	27,668.68	22 934.68
Cranberry Pipe Line	26,101.66	24,678.61
United Pipe Line	166,841.42	425,663.41
Total	38,475,527.82	38,152,546,07

Stocks increased May, 1884	322,981.75
Stocks increased April, 1884	1,945,919.83
Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	386,004.51

	RECEIPTS.	DELIVERIES.
Daily Average May, 1884	66,688	56,448
Daily Average April, 1884	65,794	54,773
Daily Average March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52,737
Daily Average February	65,208	44,352
Daily Average January	65,125	43,813

SUMMARY of the statement by the United Pipe Lines June 10, 1884:

Outstanding acceptances and certificates, May 31	67,637.75
Credit balances	99,203.67
Total liabilities May 31	166,841.42
Gross stocks	180,557.86
Sediment and surplus	13,716.44
Receipts from all sources	
Net stocks delivered to National Transit Co May	258,821.99

MAY SUMMARY.

Acceptances and certificates	271,616.75
Credit balances	154,046.66
Total liabilities	425,663.41
Gross stocks	447,819.08
Sediment and surplus	22,155.67
Receipts from all sources	
Total deliveries	33,127,389.65

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

PUBLISHED MONTHLY BY

McMULLEN & SNELL.

BRADFORD, PA.

W. C. ARMOR, MANAGER.

J. C. McMULLEN. A. L. SNELL.

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IN THE consumption of petroleum by locomotives and steam vessels the Russians appear to have made great progress. Yankee ingenuity has never practically solved the problem in this country. Our petroleum is of much lighter gravity than the Russian, and it may be that this fact has had as much to do in preventing its use as fuel under locomotive boilers as its relative higher price. The question of economy, as compared with the cost of coal has, however, been the greatest objection. Many of our railroads own coal mines and produce it at the lowest possible cost. The value of petroleum has constantly fluctuated from year to year, and its supply in this country has never appeared so certain as that of coal, so that inventions having the object in view of producing steam by the consumption of liquid fuel have never met with any encouragement. In Russia a different state of affairs has existed from the first. Petroleum has been abundant and cheap. It is of a quality that furnishes a large percentage of refuse. The policy of the government has not been such as to stimulate an export trade, and consumption has been confined principally within its own domains. The results are shown by the facts reported to the British Journal of Engineering by a locomotive superintendent in charge of a Russian railway. Out of one hundred and thirty-one locomotives on the Grazi-Tsaritsin railway seventy-two are burning petroleum refuse, and by next October all the locomotives on this line —four hundred and sixty-five miles in length— will be using the same kind of fuel. A year's experience proves it the best and most convenient form of fuel yet discovered. Combustion is complete and there is no smoke. One pound of crude is capable of evaporating from twelve to thirteen and a half pounds of water under ordinary circumstances. It requires only four minutes' time to fill the tender tanks with three or four tons of fuel. A cold locomotive can be forced up to 120 pounds pressure in fifty-five minutes, and where the water remains warm in twenty-five minutes.

THE PRODUCING REGION.

ALLEGANY FIELD.

The canvass of the Allegany field on the first of June gave a total of 35 new rigs, 48 old rigs which had been standing for 30 days or more and 51 wells drilling, making an aggregate of 134. On the first of May, there was a total of 167. A comparison of figures indicates a decline of 33 in the amount of new work. The Allegany district, as will be seen in the summary, is the only section, except Bradford, where the "shut down" had begun in earnest. The pipe line runs in May averaged 12,193 barrels, while the April figures were 12,261 barrels. These numerals place the production of the Allegany field in the neighborhood of 12,000 barrels. The new work considered worthy of attention is confined to two sections, South Alma, and the country about the Snow well in Wirt. The Last Chance well well, on lot 26, in South Alma, between lots 25 and 27, was completed in May, and is rated from four to six barrels. The wells on lots 44 and 66 are average wells for the section, but have no influence in shaping the outlines of the South Alma streak. The wells found lately in the vicinity of lot 106 are improvements on the first ventures. Some of the best ones start as high as 100 barrels the first 24 hours, and settle to 10 barrel producers. O'Connor & Co., completed a duster on lot 80, Willing. The test well on lot 62, Willing, which has been shut down for a number of months, will make a small producer. A limited streak of oil is being developed north of the gas belt, which borders the old development in the town of Wirt. The black oil wells sunk on lots 45, 52 and 60, Wirt, have a dusty environment, and only a limited field can result from operations in this section. The Angell Oil Co. found a dry hole while looking for the northern limit of the development, on lot 11 of the town of Clarksville.

WARREN AND FOREST.

The unexpected happenings in the Wardwell section have been the conspicuous feature in the history of the Warren and Forest county development for the past thirty days. The tracts in the immediate vicinity of the Gartlan well have been fruitful in surprises, which have created a mild furore in speculative circles. The Galloway well along the road, near the Bower's farm

house, about 100 rods west of the Gartlan well, was a rank duster. The Shirley No. 1, a short distance southwest of the Galloway, was very dry, but the drill disclosed a rock formation which showed that it was on the edge of the pool. The Weible, located about seven hundred feet south of the Shirley venture, was opened up May 31, and started at a tremendous pace for this locality, flowing 1,200 barrels the first 24 hours. A week later it was doing between 700 and 800 barrels. This well is situated 130 rods southwest of the Gartlan. The Bruce well, 200 rods southwest of the Gartlan, is only a few rods north of a line drawn through the Gartlan and Weible wells. The Union Oil Co.'s well, on the Bower's farm, 600 feet northwest of the Gartlan well, produced 180 barrels the first sixteen hours. Their well about 150 feet due north of the Gartlan well started at 350 barrels.

Near the glycerine factory, on Hemlock run, the Anchor Oil Co., & Clark & Foster drilled a dry hole. The sand was struck at 863 feet and the well was sunk to a depth of 986 feet. They found eight feet of a poor sand rock, which affords a fair amount of gas. There were no traces of oil visible.

The Hoffman well, on lot 461, Mead township, along Morrison Run, was tubed Saturday evening, May 24. The owners and employes are free to state that three plugs are in the well. On the afternoon of May 30th, six days after the well had been finished, a gauge showed an average of 20 barrels per day. There is some doubt as to the sand from which the well is producing. The majority believe it is the regular Stoneham sand; it may be from a lower level. The Hoffman well is southwest of the Gartlan gusher about three miles, and may indicate a continuation of the Wardwell pool. Until the well is drilled deeper its capacity as a producer must remain a matter of conjecture.

The 98 wells finished in the Warren and Forest field had a new production, on the last day of the month, of 1542 barrels. Of this number of wells 12 came in dry.

There were 85 wells completed in April, having a production May 1st of 1120 barrels. On the first of June there were 70 new rigs up and building, 21 old rigs which had been standing for 30 days or more, and 82 wells drilling, making a total of 173. The count May 1st gave an aggregate of 164.

BRADFORD FIELD.

Throughout the Bradford district there has been shown a disposition to stop the drill during the past sixty days. With the exception of one locality no large wells are being found in this old field. On lots 579 and 580 the Union Oil Company and John McKeown are completing wells which in size and staying qualities compare with the best found at the Cole Creek front during the early days. This prolific spot, which is now being operated, is situated on a lofty summit at the head-waters of the east branch of Cole Creek and Kinzua streams. The wells are deep, the sand is not reached until a depth of over 2,000 feet is attained. Some of these wells, after being torpedoed heavily, start at 250 barrels. There are dry holes on the east and west sides and at the southwest end of this undrilled pool. On warrant 5,556, along the narrow-gauge railroad, southwest of Marshburg, Van Vleck & Schoonover are drilling a test well. Operators continue to drill old wells deeper in some sections, and this with the new production and increased yield from torpedoing, maintains the average of the field. Bradford's production has reached a point from which it does not move readily either way. There were 91 wells completed in the Bradford field during May, with an estimated new production on the last day of the month of 936 barrels. Four of these wells came in dry.

BALLTOWN.

The gauge by the scouts of the Balltown field, taken April 10th, give a production of 2,558 barrels from 78 wells. On the 25th of May their measurements of the production from 88 wells was 2,133 barrels. During the spring months the drilling done in the Balltown field has not sustained the production. The average daily pipe line runs from the Balltown field during the past three months has been as follows: March, 2,813 barrels; April, 2,399, and for May 2,260 barrels. There is but little interest in the drilling in the Balltown field. The field is outlined in all sections except at the southwestern end where May, Kelly & Grandin are giving the drill some play. Their No. 25 well started at 200 barrels, and on the 10th inst. was producing 50 barrels per day. Their No. 26, southwest and west of No. 25, near the banks of the Tionesta, is drilling. Mr. Hague said the well would be shut down as soon as it was cased. The seven wells completed in the field during May had an estimated production on the last day of the month of 176 barrels. June 1st there were six rigs up and building and five wells drilling.

COOPER.

The gas lights of Cooper Hill dispel the gloom

from quiet scenes. The great gushers have ceased to roar, and since the McKinney strike at Henry's Mills the oil trade has not been disturbed to any extent by the happenings on the Tionesta in this nook of the field. At the southwestern end of the belt J. M. Clapp's No. 5 well, southwest of No. 3, was finished since the first of the month and started at 43 barrels per hour. Fertig & Henne's well, 1200 feet from the southern corner of the triangular piece of ground east of the J. A. Tract, is practically a failure. The theory that a streak existed south of the one upon which the McKinney well is located, is dissipated by this failure. The well, from indications, might make a five-barrel producer. Melvin, Walker & Shannon finished a dry hole on their property during May.

Cochran Bros. have drilled a row of wells along the southern and eastern lines of their purchase on lot 407. Their last well, No. 8, the fifth location from the souteastern corner of their purchase, completed about June 12th, started at 50 barrels with a torpedo. They are drilling Nos. 6 and 9 and have one rig up.

On lot 49, of warrant 3,177, Forest county, Goettel & Roess Bros. have purchased a rig erected by J. M. Arter and are drilling a well.

On the 25th of May the 219 wells of the Cooper & Henry's Mills section, according to the gauge by the scouts, were producing 3,722 barrels. April 10th, there were 196 wells in the district, producing 4,833 barrels. The daily average pipe line runs from the Cooper and Henry's Mills field, during April were 4,230 barrels, and 3,468 barrels in May.

J. R. Johnson & Co. are drilling a test well on warrant 3,784, in Elk county, toward the head waters of Spring creek. S. B. Hughes, the well-known oil scout, is interested in this wild cat venture.

Reid & Brenneman have lately finished a test well on division B, of lot 3,192. The Cooper sand, having a thickness of about 30 feet, was reached at a depth of 2,000 feet. The drill paused 2,050 feet below the surface, disclosing only slight traces of crude, and demonstrating that the rich streak does not cross the Tionesta on this particular line.

THE LOWER COUNTRY.

This section of the field was brought into prominence several times during May, and is noticed considerable this month. In the Wallace pool division of the Baldridge district five large wells were completed during May, which, on the first of this month, had an aggregate production of 880 barrels. These were Phillips Bros., or Agnew, Nos. 7, 8 and 9, on the McCalmont lands, and Fisher Bros. & Co., Nos. 2 and 3 on the Wallace. In the St. Joe district two new wells were completed. McGuire, on the Mulligan farm, led off about the middle of the month with a 20 barrel production, which steadily increased to 65 barrels on the first of June. Phillips Bros., on the Muenster, which is west of previous developments, began producing at 30 barrels, was up to 50 the first of June, and is now doing slightly more than 85 barrels. In consequence of these strikes territory is in demand in that section, but nearly all the choice land has been secured. On the Martin farm, Reed & Sutton played the mystery dodge for a few days in the early part of this month, and attracted some attention to their well. This well is located about midway on the belt from east to west, but slightly south of the line of previous development. It is reported at 35 barrels at this writing, and may improve to 50. Several third-sand producers in the old St. Joe district of 1874-5 have been drilled to the lower sand with good results, finding about 40 feet of the excellent pebble sand, and increasing their production 10 to 20 barrels, and a number of other third-sanders will be put deeper this month. The fourth sand improves in thickness from 40 feet in these wells on the eastern end of the streak to 68 feet in the new wells at the western end, and old operators say they have never before seen so much sand of such fine quality come out of a well as from these new fourth-sanders. The extent of the prolific area is, as yet, a mystery, which the drill will solve, though a 3,000 barrel production is claimed for the region, before the end of the year, owing to the staying qualities of the wells.

In the old Baldridge pool the Baldridge company completed a duster on the Reiber farm just at the close of May, which cuts off a southwestern extension of the field. Johnson Bros. have just passed through the sand at their well on the Henderson farm, south of the Wallace tract with some oil in the hole. They found an abundance of salt water, and the briny fluid will have to be packed off before the producing qualities of the well can be determined. The owners expect a ten-barrel pumper. Fisher No. 4, on the Wallace, at last accounts, was drilling in the sand with an inferior showing. It is south of No. 1, and southeast of Shidemantle No. 6, and indicates a petering out in that direction. Fisher No. 5, the third location east from Shide-

mantle's line, began flowing May 31, and made 585 barrels the first 24 hours, and about 500 the second 24 hours. Phillips Bros., on the McCandless farm, east of the Wallace, and Campbell & Co., on the Hazlett, north of the Pierce, are the important wells which should report this month. Reed, on the Criswell, midway between McCalmont and Butler, and Rattigan, on the Bauers, near Butler, should both be completed before the ides of July. Venango and Clarion present no points of special interest except a decreased activity in the Cranberry section.

THE TAX ON RUSSIAN PETROLEUM.

Bradstreet's Berlin correspondent writes as follows on the subject of Russian petroleum :

" It is not even yet sufficiently proved whether Russian petroleum has already exercised a noteworthy influence on the price of the world's markets, though it cannot be denied that it is possible, nay, even probable, unless the Russian Government make of their own petroleum an enormous source of income, in such a case Russian petroleum would be made so dear by taxation that competition with American petroleum would lose its importance. The intention of the Russian Government to tax naphtha is authentic, only the amount of the tax is not yet decided, but this point together with other regulations concerning the petroleum trade is now being taken into consideration at St. Petersburg. The Russian Secretary of the Imperial Domains, Ostrokij, went a short time ago to the Caucasus to investigate the region of the petroleum wells. According to his reports production about Baku is carried on most unsystematically, and if allowed to continue, exhaustion is to be feared.

Besides doing away with the greatest abuses on the spot, the Secretary proposed that Caucasian petroleum shall be as much as possible refined in Russia, and brought to foreign countries in a refined state, and that trade—especially foreign trade—shall be extended by cheap transport. Above all, as the report specially states, the oil business ought to be so managed as to yield an income to the crown." The important thing is how this ticklish affair will be settled, and whether the income for the crown, in connection with the usual custom-house annoyances, will not be so high and managed so vexatiously as to annul the intended cheapness and the extended market of the product.

The Russian Ministry of the Imperial Domains is now taking all these questions into consideration, and the result is to be laid before the Reichsrath (imperial council) for decision, which, according to the Russian custom, one may wait a long time for.

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to June 1st, 1884.

1882.	Ch'y Gr've.	Cooper.	Balltown.	Total.	Daily Av'ge
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
April	31,191	126,860	71,989	230,040	7,668
May	30,010	107,514	70,069	207,593	6,696
Total June 1. '84	3,241,982	1,702,055	1,176,905	6,123,942	8,036

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to June 1st, 1884. Cherry Grove has produced 3,244,982 barrels, Cooper 1,702,055 and Balltown 1,176,905 barrels. The daily average runs from the three fields during May were 6,696 barrels, a decrease of 972 barrels from the April figures. The daily average runs of the old Cooper section for May were 1,506 barrels, and of the Henry's Mills pool 1,962, making a total of 3,468 barrels. The daily average for April was 4,230 barrels, and of March 4,631 barrels. The Balltown field had an average of 2,260 barrels in May against 2,400 barrels in April.

The total pipe line runs from the Wardwell field were in May 31,451, in April 14,263 barrels. From the Baldridge section the May runs were 32,885, and the April 25,325 barrels.

MR. HENRY BYROM now fills the place in the Tidewater Pipe Co.'s office made vacant by the death of Will A. Imus. Mr. Byrom is a competent business man, a courteous and obliging gentleman, and will do the work to which he has been called in a satisfactory manner.

MAY OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN MAY, 1884.

Allegany Field.

Scio.

Lot. Owner.	Barrels.
1, McAllister Hostetter No 2	5
2, Dean & Irvin	10
2, Coast Oil Co No 29	7
2, do No 30	6
3, Frank Campbell	8
4, Minnow Oil Co	dry
4, McEnroe Bros	5
11, Thompson & Vesey No 5	10
11, Reuben Carroll	10
47, A J Applebee No 2	8
50, The Union Oil Co No 6	8
Wells	11
Production	77
Dry	1

Alma.

3, M J McMullen No 7	8
4, Bussell & Co	10
20, Wm Coast No 19	15
24, Koch Bros	12
24, New Milford Oil Co No 7	10
24, W F Jones	10
38, Weiser Bros & Co No 9	10
38, do No 11	10
38, do No 22	8
39, Weeter & Baldwin	8
40, A T Palmer No 8	8
44, Torrey & Co	8
66, Torrey & Jones	5
107, I W Shirley No 2	8
120, McCalmont Oil Co No 2	10
142, Willetts & Duke No 8	8
142, Dean & Smith No 3	8
Wells	17
Production	156

Wirt.

1, Early Bros	8
33, Miner, Wellman & Fuller No 18	12
52, (A J Jordan farm) Milton Oil Co	10
60, Lester, Jordan & Co	10
61, Lester & Co	10
57, Anchor Oil Co No 4	5
57, do No 5	10
Wells	7
Production	65
Dry	–

Bolivar.

6, A P Tanner No 2	8
7, W & J Duke No 6	8
7, do No 15	12
7, Coast Oil Co No 19	10
7, do do No 28	10
7, do do No 46	12
7, do do No 47	12
7, do do No 5	10
8, (Wetherby) Empire Gas Co	8
8, (Ford) do	8
8, Jordan Oil Co No 4	8
15, Kelly & McMurray No 2	8
15, O P Boggs	5
15, Sawyer & Co No 8	10
15, do No 10	10
22, Eighmey est	8
23, F C Streeter & Co No 2	12
23, do No 6	10
23, Eighmey Bros No 2	10
24, H M Ernst No 5	6
23, Johnson & Conroy No 11	10
24, J O Johnston No 3	10
24, do No 5	10
30, H. Stewart No 4	8
31, Fisher Oil Co No 8	8
31, Smith & Co	8
45, Knox & Co No 4	5
Wells	27
Production	244

Clarksville.

9, Merritt & Co	10
10, Whipple Bros No 7	10
10, Angell Oil Co	10
11, do	dry
10, C W Scofield No 4	10
10, do No 6	10
17, Hill Farm Oil Co	10
18, Mahan Oil Co No 7	10
34, Love & Co	5
Wells	9
Production	75
Dry	1

Genesee.

15, McCalmont Oil Co No 21	12
15, do do No 22	15
15, do do No 23	12
21, A T Palmer No 2	5
23, Emery Oil Co No 13	10
Champlain farm, Emery Oil Co No 7	10
Wells	6
Production	64

Miscellaneous.

Willing, lot 80, O'Donnel & Manning	dry
Independence, lot 103, Leasure	dry
Ceres, Empire Gas Co	dry
Wells	3
Production	—
Dry	3

Bradford Field.

East and West Branches.

Farm. Operator.	Barrels.
Renner, Harris	5
Clark, Barnsdall Bros No 1	5
Hooker, Chapin & Chapman No 1	6
Beardsley, Curtis & Bronson No 17	7
Foster, C H Foster	3
Wall, Barse and others	dry
Bingham, lot 178, R J Straight No 11	8
do lot 186. do No 2	10
Dent, P C L & P Co, No 63	5
do Whitney & Wheeler No 38	20
Mill lot, do No 8	8
West Branch, Harrison Emery No 2	6
Clark, Clark & Owens No 4	8
Owens, Hall & Slocum	6
Taylor, Atlas Oil Co No 10	15
Lovejoy, Willoughby & Thayer No 3	10
Reed, Bradford Oil Co No 10	8
Craft, Roy & Archer No 11	10
Freeman, Leopold Brothers	6
Jewell, Martin & Gillespie	6
Warrant 4914, Thunderbrook Oil Co	dry
Stinson, Asher Brown No 8	6
Lewis Run, C S Whitney No 7	gas
Inglesby, P T & W C Kennedy No 1	7

Quintuple.

83, Pat Newell	10
Wells	25
Production	175
Dry	3

Kendall Creek.

Moore, Anchor Oil Co	8
Mehan, Zane & Taylor No 10	8
Lafferty, G H Van Vleck No 40	8
Norton, F W Mitchell	10
Keating, Sproul & Shaw	10
Failing, Daily & Co	10
Willets, Charles Young No 24	10
Berger, P T & W C Kennedy No 3	5
Kilbury, Shear & Flynn No 3	6
Wells	9
Production	75

Foster Brook.

E T Co, Boyne, Penny & Coleman No 9	10
do H L Blackmarr No 17	10
do do No 18	10
do F L Blackmarr & Post No 8	10
do do do No 14	10
do A E Jones No 7	10
do do do No 8	10
do Enterprise Transit Co No 81	8
do do do No 83	10
Foster, C H Foster	8
C B & H, Watson Oil Co No 30	10
do do No 31	10
do Smith & Wood No 5	10
do Coldren & Wolf No 13	10
do Josett Brothers No 5	10
Tait, Thomas Tait	10
Wells	16
Production	156

Four Mile.

Van Campen, George Van Campen & Sons No 20	10
do W M Brown	10
do do	10
do Wm Doe No 2	12
do do No 3	10
do Booth, Bovaird & Seyfang	8
do G L Watson & Co No 4	12
do Tarbell & Co No 4	8
do Merrill & Perrin	10
Widow Carrol, Thomas Kervin No 6	10
Moultrous, John Coast, No 10	10
Stevens, Wm Stevens No 4	8
do Book & Rhodes	8
do C B Whitehead No 2	10
Sparger, Chamberlain No 8	10
Stewart, E M Johnson	10
Firkel, Franchot Brothers No 6	10
Wells	17
Production	166

Indian Creek.

Pine lot, R G Bailey No 9	10
Loup, Hazelwood Oil Co No 49	10
Dodge, Shear Brothers No 7	8
Keating, J L McKinney & Co No 32	10
Rounds, Forest Oil Co and A J Thompson No 30	10
Heissler, Dr W L Crismann No 1	8
do do No 2	8
Weston, S S Ramsey No 5	8
Wells	8
Production	72

Cole Creek.

Bingham, lot 495, Forman & U O Co No 2	8
do lot 579, Union Oil Co (Forman agt) No 1	25
do lot 579, do do do No 4	35
do lot 569, do do do No 2	20
do lot 569, do do do No 3	50
do lot 466, A C Hawkins No 4	15
do lot 580, John McKeown No 1	25
do lot 580, do No 2	25
do lot 580, do No 3	25
do lot 580, do No 4	25
Wells	10
Production	253

Kinzua.

Bingham, Union Oil Co No 51	8
do lot 136, P T & W C Kennedy No 2	10
do lot 129, do No 4	8
do lot 136 H P Malone No 24	8
Kane, Capt C P Byrom and others	dry

Kinzua Village.

Campbell, Porter & Conley No 4	5
Wells	6
Production	39
Dry	1

Warren and Forest.

Glade and other Towns.

Tract. Owner.	Barrels.
Wardwell, Benedict & Robinson No 9	15
Cobham, Union Oil Co No 12	15
do do do No 14	30
do do do No 15	40
Bauer, do do No 1	120
Cobham road, Galloway & Grace	dry
Elliott, Hackett & Shirley No 1	dry
Stewart, Anchor Oil Co No 1	dry
do Wesley Chambers No 3	dry
Warrant 5540, Anchor Oil Co No 1	dry
Gartlan, do No 1	350
Storum, Hayes & Calhoun	dry
Yehl, Bond, Cogswell & McKelvey	dry
Storum, C A Campbell	8
Lacey, Bradley & McDonald	4
Irvine, T J Melvin No 2	10
O H & S, Wesley Chambers No 5	4
Palmer, Anchor Oil Co No 2	3
J Roy, James Roy No 19	8
Davis, Davis Brothers	5
Branch, S C Rhodes No 3	3
Verback, C W H Verback No 1	4
Lesser, C P Henry	4
Blakeslee, J C Welles	8
Lesler, Lesler & Son	3
Madison, Union Oil Co	dry
Wells	27
Production	634
Dry	8

Clarendon.

35, Bell, Hazeltine & Stone	5
53, The Union Oil Co No 18	6
55, D Beatty & Son No 34	6
462, Fred Hue & Co	6
464, Columbia Oil Co No 14	8
464, M B McManus No 2	5
464, do No 3	5
495, J Smith & Son No 2	6
495, Fred Hue & Co No 8	5
78, Kratzer No 1	5
79, Armor & Bronson No 8	8
105, P Golden & Co	6
105, R I Shugart No 7	8
106, C C Duffield & Co No 4	6
107, Fay & Lawton No 16	5
107, Lowery & Co	5
108, Hackett & Shirley No 3	6
108, C H Filkins No 2	6
495, W W Ballard No 2	6
526, F G Keatley No 3	6
527, F H Rockwell & Co No 12	8
527, do do No 13	8
582, H G Lapham No 1	10
531, C A & D Cornen No 2	10
556, do No 10	8
591, Taylor & Kline No 2	10
Wells	26
Production	173
Dry	–

Tiona.

109, J S Patterson No 23	5
109, do No 24	5
109, do No 25	5
109. do No 26	6
109, do No 27	6
109, Schoublom & Townsend No 4	6
109, do do No 5	6
110, Fertig & Henne No 14	6
110, do do No 15	6
110, do do No 16	6
161, A & S Short No 3	8
164, Helm & Mealey No 3	6
165, Wm Pagett No 16	8
165, Hill & Powell No 8	6
201, Sage, Kelly & Co No 3	4
242, Anchor Oil Co No 4	5
Wells	16
Production	94

Cooper District.

Henry lands, McCalmont Oil Co No 21	35
do do No 22	50
do do No 24	35
do do No 29	30
439, do No 18	15
Henry lands, Syndicate No 18	5
2735, Reno Oil Co No 6	6
Cooper tract M W S & Co No 35	50
do do No 36	40
do do No 37	dry
407, Cochran Brothers No 3	25
407, do No 4	25
407, do No 5	20
407, Shank & Emery No 2	10
438, do No 15	7
438, do No 16	25
438, do No 17	50
438, do No 18	15
Clapp pur J M Clapp No 4	12
E T Co, Fertig & Henne No 5	dry
Wells	20
Production	455
Dry	2

Balltown.

3194, Porcupine Oil Co No 18	25
751, (Cherry Grove) Porcupine Oil Co No. 19	70
751, do do 22	6
4821, Balltown Oil Co No 21	5
4821, do do No 22	15
5236, May, Kelly & Grandin No 25	40
4792, Howe Oil Co. No. 12	15
Wells	7
Production	176

Miscellaneous.

Lot 600, Watson twp, Joy & Co	dry
South Valley twp N Y, Vandergrift & Co	dry
Wells	2
Production	–
Dry	2

Lower Country.

Venango.

Farm. Operator.	Barrels.
Rockland, Dale Bros	6
do J. C. Buchanan	dry
do Lee & Co	dry
Rembold, Dale & Smullin No 12	15
do J B Smithman	5
do Woods & Graham No 7	20
do do do No 8	10
McCalmont, McCalmont & Richardson	dry
Flinchpaugh, Lee & Matron	dry
Sayres, Wolf & Kugler	20
Kauffman, P H Judd & Co	3
do Dale Bros	8
McCalmont, S P McCalmont	5
do Braunschweiger & Co	6
McBride, McBride & Co	dry
Diamond, W H Loots	20
Tract 67, J B Smithman	15
Pet Centre, Esprey & Co	6

Vicinity Emlenton.

Schmuck, A Schmuck	4
Comstock, Goodrich & Hannifan	5
Russell, W F Baum	7
McCombs, King Bros & Helter	5
Weller, J Weller	4
do R W Porterfield No 4	6
F & M, T J Flynn	5
McCullough, Porterfield & McCombs	7
Crawford, J A Crawford	6
McCullough, Curry & Co	6
do Klingler, Saulsbury & Co	5
Unknown, Black & Co	5
Ure, Chas Cooper	4
Wells	31
Production	208
Dry	5

Clarion.

Red Bank, W M Reynolds	dry
Lehigh, Pye & Co	4
Washington twp, Pine Grove Oil Co	dry
Wells	3
Production	4
Dry	2

Butler and Armstrong.

Wallace, Fisher Bros No 2	225
do do No 3	80
McKarns, do	10
McCalmont, Phillips Bros No 7	90
do do No 8	120
do do No 9 est	200
Reiber, Baldridge Oil Co	dry
Pierce, Jas S Cooper	15
Mulligan, McGuire & Co	65
Muenster, Philips Bros	50
Raymilton, A W Raymond	10
Blakeley, Blakeley & Co	15
Wells	12
Production	880
Dry	1

DRILLING WELLS, RIGS UP AND BUILDING JUNE 1.

Allegany Field.

Scio.

Lot. Owner.	Depth.
2, Dean & Irvin (old)	rig
2, Waco Oil Co (old)	rig
2, Coast Oil Co No 31	rig
2, Johnson & Co	rig
3, Coyle & Co (old)	rig
4, Mc Enroe Bros	rig
11, Thompson & Vesey No 3 (fishing)	800
11, do do No 6 (old)	rig
11, Lowcomer & Turner (old)	rig
12, Allen & Morse No 3 (old)	rig
12, Griffin & Co No 7 (old)	rig
12, do No 9	1000
12, do No 10	rig
12, Allen & Morse No 3 (old)	rig
35, Duke & Norton Oil Co	800
47, A J Applebee No 3	drilling
50, The Union Oil Co No 7	800
50, do do No 8 (old)	rig
50, do do No 9 (old)	rig
McAllister, Hostetter & Co No 3	rig
New rigs	5
Old rigs	10
Drilling	5
Total	20

Alma.

1, Phillips Bros No 14	500
1, do No 15 (old)	rig
3, M J McMullan & Co No 8	rig
17, Scott	300
18, H L McMullan No 10 (old)	rig
19, Rumsey & Lovell No 2	500
20, Win Coast No 20 (old)	rig
23, Vance & Horton (old)	3 rigs
24, New Milford Oil Co No 8 (old)	rig
24, W F Jones	200
26, Last Chance Oil Co	700
24, Sutherland & Co No 5 (old)	rig
38, Weiser Bros No 23	rig
38, do No 24 (old)	rig
38, do	200
63, Leasure & Co	rig bldg
71, Willets	sand
80, Rathburn	rig
88, Duke & Co (old)	rig
105, Hall & Co	rig
106, Howard, O'Connor & Shanley No 2	200
106, do do do No 3 (old)	rig
106, Thornton & Dobbins No 3	drilling
106, do No 4	rig
107, I W Shirley No 3	500
107, do No 4	200
110, Shirley & Hostetter No 2	100
110, do No 3	rig bldg
120, McCalmont Oil Co No 3	800
139, Anderson & Co	300
140, Duke, Willetts & Rauber	600
142, Willets & Duke (old)	rig
H M Harkness No 3 (fishing)	800
142, Dean & Smith No 4	800
142, do do No 5	rig
142, Scott No 2	250
New rigs	8
Old rigs	12
Wells drilling	18
Total	38

Wirt.

14, Lester & Co	rig
29, John Moran	rig
33, Miner, Wellman & Fuller No 19	400
33, do do No 20	rig
44, M C Mulkin	600
44, Allegany Gas Co	800
48, Nile Oil Co	drilling
51, Barton, Ackerly & Smith	sand
51, Allegany Gas Co	rig
54, Metcalf & Smith	drilling
61, Lester & Co	rig
New rigs	5
Old rigs	–
Wells drilling	6
Total	11

Bolivar.

6, I Collins (old)	rig
7, W & J Duke No 16 (old)	rig
7, Coast Oil Co No 20	rig
7, do No 42	rig
7, do No 45	rig
7, A A Hopkins No 16 (old)	rig
8, (Ford) Empire Gas Co (old)	rig
8, Jordan Oil Co No 5	200
15, Kelly & McMurray No 3	rig
15, (Sawyer farm) Sawyer & Co No 3	800
15, do do do No 4	rig
15, (Woodard) do No 1	800
15, do do No 2	rig
16, Orin Wetherby, Empire Gas Co (old)	rig
23, F C Streeter & Co	2 rigs
23, Irvin & Morgan No 2	300
24, H M Ernst No 6	300
24, J O Johnston No 7	300
24, do	200
30, Fritz & Lowry No 8 (old)	rig
30, do do No 10 (old)	rig
31, Smith & Co	200
63, Northrup (old)	rig
New rigs	8
Old rigs	8
Drilling	8
Total	24

Clarksville.

9, Heuston & Brecht No 4 (old)	rig
9, P T Kennedy No 12	100
10, Whipple Bros	800
10, Angell Oil Co	800
10, do do	rig
10, McKelvy & Co No 3	300
10, Dalrymple Bros	600
10, C W Scofield No 8	500
12, Cuba Gas Co (old)	rig
17, William Cranston	200
17, Hill Farm Oil Co	rig
Smith farm, National Transit Co	300
Butts, Love & Co	300
Earnout, Smith & Barton	rig bldg
New rigs	3
Old rigs	2
Wells drilling	9
Total	14

Genesee.

8, I Willets (old)	rig
8, do (old)	rig
14, C W Scofield No 9 (old)	rig
14, Merwin (old)	rig
15, McCalmont Oil Co No 20	rig
21, Empire Gas Co No 3 (old)	rig
22, I Willets No 13 (old)	rig
22, do No 14 (old)	rig
22, do No 15 (old)	rig
22, do (old)	rig
23, Hughes & Coughlin No 9 (old)	rig
23, Emery Oil Co No 14	500
23, do do No 15	300
23, do do No 16	rig
23, do do No 17	rig
Champlain, Emery Oil Co No 8	rig
23, C W Scofield No 6 (old)	rig
24, White & Ensign No 16	300
29, William Cranston (old)	rig
24, (Coon farm) J W Davis & Co	rig
31, Hugh L McMullan (old)	rig
38, S E Young (old)	rig
38, Empire Gas Co (old)	rig
New rigs	5
Old rigs	15
Drilling	3
Total	23

Miscellaneous.

Wellsville, Palmeter & Co (old)	rig
Shingle house, Allen, Princess & Co	drilling
Willing, lot 42 L H Best (shut down)	sand
Tioga county, (Bird creek near Millerton) Unknown	rig
New rigs	1
Old rigs	1
Wells drilling	2
Total	4

Bradford Field.

East and West Branches.

Farm. Operator.	Depth.
Paton, McClure & Co (old)	rig
Clark, McCray Bros	rig
Willis, do No 29 (producing)	550
Hinchey, W S McMurray No 2	drilling
Hooker, Chapin & Chapman No 2 (old)	rig
Whittaker, do	rig
Glass, T N Barnsdall (old)	rig
Cockroft, Van Wormer	sand
Bingham, G H Van Vleck, No 24	sand
do do No 31	1600
do lot 168, R J Straight No 9	sand
Dent, P C L & P Co No 64 (old)	rig
do do do No 65 (old)	rig
do Whitney & Wheeler No 40	rig
do do No 41	200
do Emery Oil Co No 24	1000
King, Barnsdall Brothers No 4	sand
do do No 5	rig
Mill lot, Whitney & Wheeler No 9 (old)	rig
Clark, Clark & Owens No 5	rig
King, J J Carter No 1	400
do do No 2	rig
Crooker, Jennings & Curtis No 10 (old)	rig
Taylor, Atlas Oil Co No 11	drilling
do do do No 12	rig
Lovejoy, Willoughby & Thayer No 5	rig
do do do No 7	700
do do do No 8 (old)	rig
Paul, Bayne, Fuller & Melvin No 4	sand
do do do No 5	rig
Reed, Bradford Oil Co No 11 (old)	rig
Moody, Emery Oil Co No 102	1000
O'Donnell, Tom Kelley	1000
Covert, W S Hodgman	500
Wilson, Bradford Gas Co	rig
Sugar Run, W H D Chapin (old)	rig
Inglesby, P T & W C Kennedy No 2	drilling
Kissam, Jos Stettheimer	900
Stinson, Asher Brown No 9	rig
Pratt, Hostetter & Brown	rig
Cary, Duncan No 4	rig
Herrick, Springer & Co	300
Mack, Fisher Brothers	rig

Quintuple.

25, E Strong & Co No 2 (old)	rig
44, J W Humphrey (old)	rig
139, M J Seymour	rig
181, Booth Bros	rig
220, Abbott, Proper & Co (old)	rig
227, G W McCullagh No 3	rig
238, Asher Brown	rig

New rigs . . . 17
Old rigs . . . 13
Drilling . . . 20
Total . . . 50

Kendall Creek.

Moore, Anchor Oil Co	1200
do do	800
do do	rig
Moore, Watson & Curtis No 4	drilling
do do do No 5 (old)	rig
Melvin, P C L & P Co No 85 (old)	rig
Borden, Urquhart & Lavens (old)	rig
Norton, Dan Clark No 3 (old)	rig
do do do No 4 (old)	rig
Irons, Carter (old)	rig
Dennis, Mason Dennis	sand
Dodge, Dodge & Carter	200
do do (old)	rig
do do	rig
Willetts, Charles Young No 25	400
Bingham (lot 77) B F Brinton & Co	rig

New rigs . . . 3
Old rigs . . . 7
Drilling . . . 6
Total . . . 16

Foster Brook.

E T Co, Boyne, Penny & Coleman No 10	1000
do do do No 11	rig
do F L Blackmarr & Post No 5	rig
do do do No 17	800
do Enterprise Transit Co No 84	1000
do do do do No 85	1000
Foster, C H Foster No 12 (old)	rig
C B & H, Watson Oil Co No 32	900
do do do No 33	rig
do do do No 34	rig
do Smith & Wood No 6	1500
do Coldren & Wolf No 14	800
do Josett Brothers No 6	rig bldg
do Juter & Yager	drilling
do do	rig
Tait, Thomas Tait	200

New rigs . . . 5
Old rigs . . . 1
Well drilling . . . 10
Total . . . 16

Four Mile.

Van Campen Wm M Brown	drilling
do do	drilling
do do	rig
do do	rig
do Geo Van Campen & Sons No 21	rig
do Geo Van Campen & Sons No 22	rig
do Cleveland Oil Co No 5 (old)	rig
do do do No 6	rig
do Wm Doe No 4	rig
do Adams, Carson & Co (old)	2 rigs
do do do	rig bldg
do Merrill & Perrin (old)	rig
Waters, Griffin & Howard No 2 (old)	rig
Widow Carrol, Thomas Kervin No 7	800
do do No 8 (old)	rig
Moultrous, John Coast No 11	drilling
Stevens, William Stevens No 5 (old)	rig
do William Chambers No 5	800
do Book & Rhodes	rig bldg
do C B Whitehead No 3 (old)	rig
Stewart, E M Johnson	200
Firkel, Franchot Bros No 7	rig
Stevens, Coast & Curtis	200
do do	rig bldg
Garr, Tuna Oil Co	rig
Johnson, Hay & Son	rig bldg

New rigs . . . 12
Old rigs . . . 8
Drilling . . . 7
Total . . . 27

Indian Creek.

Barse, U O Co (G V Forman agent) No 35	sand
do do do No 36	rig bldg
North Branch, J D Downing & Co (old)	rig
do do do (old)	rig
Keating, Forest Oil Co No 46	1100
do do do No 47 (old)	rig
Hamlin, Miller & Odell No 4 (old)	rig
Dodge, Shear Bros No 8	rig
Zimmer, Shear Bros No 2 (old)	rig
do do No 3 (old)	rig
Keating, J L McKinney & Co No 33	400
do do do do No 34 (old)	rig
Barse, Moulton	1400
Spiller, Spiller	rig
Morse, Morse, & Brown (old)	rig
do do	rig bldg
Canfield Hollow, Leasure & Barton	300
Hill, E H Sherman & Co	rig
Winchell, White & Young	300
do do	rig

New rigs . . . 5
Old rigs . . . 8
Drilling . . . 6
Total . . . 19

Cole Creek.

Rew, Capt E Frawley (old)	rig
Bingham, lot 366 Union Oil Co No 15	300
Bingham, lot 579 Union Oil Co (Forman agt) No 6	800
do lot 569 Union Oil Co (Forman agt) No 5	800
do lot 569 Union Oil Co (Forman agt) No 7	100
do lot 575 Union Oil Co	rig
do lot 536 do (old)	rig
do lot 536 do (old)	rig
do lot 574 Hamlin & Rose	300
do lot 574 do	rig
do lot 580 John McKeown No 5	1800
do lot 580 do No 6	400
do lot 580 do No 7	100
do lot 580 do No 8	100
do lot 580 do No 9	rig

New rigs . . . 3
Old rigs . . . 3
Drilling . . . 9
Total . . . 15

Kinzua.

Bingham, Union Oil Co No 54	800
do do No 55 (old)	rig
do do No 56	rig bldg
do lot 129, P T & W C Kennedy No 5	rig
do H P Malone No 25 (old)	rig
do (C P & H pur) Emery Oil Co No 38	1400
do do Emery Oil Co No 39	400
do do Emery Oil Co No 40	rig
do 136 Thos A & J M Tait No 6	1300
do 136 do do No 7	500
Hagadorn, P Newell	800

Kinzua Village.

Warrant 2590, Jameson (fishing)	275
do 2724, Corydon, Coquette Oil Co	drilling
do 5556, Schoonmaker & Van Vleck	rig
U O Co, Dr E A Van Scoy	rig bldg

New rigs . . . 5
Old rigs . . . 2
Drilling . . . 8
Total . . . 15

Warren and Forest.

Glade and Other Towns.

Tract. Operator.	Depth.
Wardwell, Benedict & Robinson No 10	sand
do do do No 11	drilling
do do do No 12	rig
Cobham, Union Oil Co No 13 (old)	rig
do do do No 16 (shut down)	200
do do do No 17	500
do do do No 18	100
Bauer, do do No 2 (old)	rig
Page, do do No 1	rig bldg
Emery, Marsh Weible & Co	sand
Cobham, Bruce & Galloway	drilling
Elliott. Hackett & Shirley No 2	400
Foster, Wesley Chambers No 1 (old)	rig
do do No 2	700
Stewart, Wesley Chambers No 2	100
do do do No 4	rig
Frost, do do No 1 (old)	rig
Elliott, do do No 1	rig
J A Gartlan, Anchor Oil Co No 2	rig
do do No 3	rig
Clark, do No 2	sand
do do No 3	rig
do do No 4	rig
Kirwin, Clark & Foster (old)	rig
Chapman, Jenkins & Co	rig
Parker, Fred Hayes & Co (shut down)	sand
Storum, Pickett & Campbell	rig bldg
Elliott, E T Johnson & Co No 1	rig
do do No 2	rig
Frost, S S Fertig	rig
Irvine, Brown Brothers No 3	600
do T J Melvin No 3	300
Ott, Herzel & Ames	rig
Lacey, Capt Grace	rig
Island, Jacob Truby	rig
O H & S, Wesley Chambers No 6	600
J Roy, James Roy, No 21	200
do (School house lot) Pickett & Hall	rig
Rankin, J McWilliams	600
Beatty, D Beatty	400
Verbeck, C W H Verbeck No 2	rig
John Sweating, J A Magee (old)	rig
Asylum, North Warren, Sanford & Jameson (old)	rig
Elk twp, Warrant 5576, Calhoun & Co	drilling
Pleasant twp, (lot 520) Adams & Story	drilling

New rigs . . . 18
Old rigs . . . 7
Drilling . . . 20
Total . . . 45

Clarendon.

Lot. Operator.	Depth.
55, Union Oil Co No 19	rig
54, D Beatty & Son No 35	800
54, do do No 36	rig
78, do do (old)	2 rigs
56, Branch & Co	sand
36, Borchert & Conklin No 5	drilling
461, Otis Hoffman & Co (shut down)	sand
462, Stoneham Oil Co No 2 (fishing)	sand
462, do No 3	rig
462, D Riddlesperger	drilling
462, do	rig
495, J Smith & Son No 5	rig
462, Dean & Seifert No 1	500
462, Fred Hue & Co No 3	rig
464, Logan & Cramer (old)	rig
464, Columbia Oil Co No 11 (old)	rig
464, do do No 12	sand
464, do do No 17 (old)	rig
464, Waid	rig
464, M B McManus No 4	rig
497, W Benedict No 12 (old)	rig
497, Wm Pagett No 2 (old)	rig
495, Johnson & Co No 6	400
78, Kratzer No 2	rig
79, Thayer & Crosby No 5	200
106, Shugart & George No 10	rig
107, Fay & Lawton No 14 (old)	rig
107, do do No 15 (old)	rig
108, Hackett & Shirley No 8	sand
108, do do No 4	400
108, do do	rig
108, do do	rig bldg
108, C H Filkins No 3 (old)	rig
495, W W Ballard No 3	sand
495, do do No 4	rig

494, Patterson & Solliday No 9 500
494, do No 10 . . . . rig
526, F G Keatley No 4 . . . . . drilling
526, Adams & Story No 1 1000
529, Beecher & Copeland 500
529, J C Goal . . . . . rig
528, Beckner . . . . . rig bldg
530, H B Porter No 10 750
530, do No 11 . . . . . rig
557, Copeland & O'Donnell No 4 . . . 600
561, F H Rockwell & Co No 7 300
583, do do do No 9 . . . . sand
583, do do do No 10 . . . . rig
583, do do do No 11 . . . . rig
582, H G Lapham No 2 400
582, do No 3 . . . . . rig
531, C A & D Cornen No 3 200
531, do do No 4 . . . . . rig
556, do do No 9 100
556, do do No 11 . . . . . rig
591, Taylor & Kline No 3 100
591, do No 4 . . . . . rig bldg
584, Markham & Co No 2 250

New rigs 23
Old rigs 10
Drilling 26
Total 59

Tiona.

Lot.	Operator.	Depth.
103,	Fertig & Henne No 7	sand
109,	J S Patterson No 28	500
109,	do do No 29	900
109,	do do No 30	rig
109,	Schonhlom & Townsend No 6 . . .	800
109,	do do No 7 . . .	500
109,	do do No 8 . . .	rig
109,	do do No 9 . . .	rig bldg
110,	Fertig & Henne No 17	sand
110,	do do	2 rigs
161,	A & S Short No 4	600
161,	do do No 5	rig
161,	Helm & Mealey	rig
164,	do No 4	rig
164,	Hill & Powell	rig
165,	Wm Pagett No 17	rig
165,	C H Coffin & Co No 2 (old)	rig
204,	A G Aiken & Co	100
204,	E O Emerson	sand

New rigs 10
Old rigs 1
Drilling 9
Total 20

Cooper District.

Tract.	Operator.	Depth.
Henry lands,	McCalmont Oil Co No 26	sand
do	do do No 28	500
Lot 439,	do do No 21	700
do 439,	do do No 22	rig
do 439,	do do No 24	400
do 439,	do do No 25	rig bldg
do 396,	Horton, Crary & Co No 8 . .	sand
do 396,	do do No 9 . .	200
do 396,	do do No 10 . .	rig
J A Tract,	Anchor Oil Co No 4	1000
Cooper,	Anchor Oil Co No 35 produci'g	1700
do	M W S & Co No 38	300
Lot 407,	Cochran Bros No 6	rig
do	do No 8	1000
do	do No 9	rig
do	Shank & Emery No 3	1500
do	do do No 4	rig
Lot 438,	do do No 14 (fishing)	sand
do	do do No 19	1500
do	do do No 20	1200
do	do do No 21	rig
do	do do No 22	rig
do	do do No 23	rig
do	do do No 24	300
Williamson,	J L McKinney & Co No 5 (shut down)	sand
Clapp pur,	J M Clapp No 5	1700
Warrant 3193,	(Div B) L A Brenneman	500

New rigs 9
Drilling 18
Total 27

Balltown.

Lot.	Operator.	Depth.
3194,	Porcupine Oil Co No 20	sand
3194,	do No 21 (old) . .	rig
3194,	do No 23	rig
3194,	do No 24	rig
3194,	do No 25	rig
4821,	Balltown Oil Co No 23	800
4821,	do do No 24	rig
4792,	Howe Oil Co No 15	sand
4792,	do do No 16	rig
4792,	do do No 17	rig
3195,	Agnew, Emery & Co	500

New rigs 6
Old rigs 1
Drilling 4
Total 11

Miscellaneous.

Scott Run,	C A Campbell (old)	rig
Warrant 3174,	(Forest) Arters & Co (Goettel) . . .	1200
do	3672, Forest J. R. Johnson & Co No 1 . .	sand
do	3672, do do No 2 . .	rig
do	3561, do Frost & Co (old)	rig
do	3646, Palmer & Butts	rig
do	3571, Crabtree & Davis . . .	rig
Roystone,	274, Warren Gas Co	750
Ikelson,	Philip Becker	300
Warrant 5224,	Limestone twp, Hunter & McBride	drilling
3784,	Elk, Gilmore & Co	rig

New rigs 4
Old rigs 2
Drilling 5
Total 11

Lower Country

Venango.

Farm.	Operator.	Depth.
Biery,	Richardson & Williams	900
Hughes,	Roess Bros	850
Fish,	Warner & Co	sand
Rockland,	Gillinger & Co	800
Rembold,	Dale & Smullin No 13 . . .	sand
do	do do No 14 (old) .	rig
Sayres,	Wolfe & Kugler	200
W & K,	do	rig bldg
Kaufman,	Dale Bros	drilling
Diamond,	W H Loots	rig
Tract 67,	J B Smithman	drilling
Sands,	do	rig
do	do	rig bldg
Munross,	J Taylor	350
Winkelman,	Lee & Co	rig
Unknown,	McCalmont & Richardson .	rig bldg
J McClintock,	Seaberg	150
Kirkwood,	Kirkwood	sand

Vicinity Emlenton.

Black,	Crawford & Black	900
Smith,	C Weible & Co	600
Weller,	J Weller	250
Graham,	J J Nelson	300
McCullough,	Porterfield & McCombs .	800
do	do do .	400
do	Daniels & Crawford . .	400
do	Hornin, Klingler & Co .	100
do	Weaver & Co	250
do	Curry & Co	200
do	Mason & Co	100
Fox,	J Martin (old)	rig
Richey,	E Crawford & Sons (old) . .	rig
Lawrence,	Sands & Co	300
Richey,	McGrew & Crawford	200
Rhodaberger,	Stevens & Co	400
McGinnis,	J McGinnis	200
D Crawford,	Craig & Co	400
H Leslie,	Dutton & Co	drilling
Hamilton,	B F Hamilton	450

New Rigs 6
Old Rigs 3
Wells drilling 29
Total 38

Clarion.

Graham,	W Berlin	500

Butler and Armstrong.

Wallace,	Fisher Bros No 4	sand
do	do do No 5	sand
do	do do No 6	1100
do	do do No 7	spudding
do	do do No 8	spudding
do	do do No 9	rig bldg
McCalmont,	Phillips Bros No 10 . . .	400
do	do do No 11 . . .	drilling
McCandless,	do do . . .	800
Dorsey heirs,	do do . . .	150
Hazlett,	Campbell, Gibson & Co . . .	400
Renfrew,	A Shidemantle (old)	rig
Hamel,	Forest Oil Co	sand
Henderson,	Johnson Bros	sand
Martin,	S Armstrong	500
Ribolds,	J J Painter & Co	600
S Shaffner,	Wm Reed	700
Zang,	Dennison & Hoyt	900
do	do	rig bldg
Martin,	Reed & Sutton	1100
Mulligan,	McGuire & Co	150
Martin,	Pipe Liners	150
Neff,	Phillips Bros	rig bldg
Bauers,	P A Rattigan	700
Wid McCray,	Hunter & Cummings . .	750
Kamerer,	do . .	rig bldg
Reep,	Westerman & Co	150
Raymilton,	Raymilton Oil Co	sand
Barkeyville,	B F Hamilton	drilling
Six Points,	W C Vance	800
Turner,	W J McKee (old)	rig

New Rigs 4
Old Rigs 2
Wells drilling 25
Total 31

NO SMOKE.

After experimenting for many years, Dr. C. Holland has produced a locomotive engine that emits no smoke. It has been successfully running on the Eastern Railroad, between Boston and Portland, for several weeks. Its tender has a water tank somewhat larger than the usual size, and within this is a tank holding nine hundred gallons of crude naphtha. This and the water from the outer tank are forced by a donkey pump through small valves into four retorts under the boiler, and are there decomposed, the oxygen of the steam uniting with the carbon of the oil at great heat, and leaving the hydrogen free. The fire can attain its highest degree of heat in ten minutes from the time it was lighted. The estimated cost of running the engine is about six cents per mile—a saving of about forty-five per cent. on the cost of coal. The oil is entirely consumed, and there is no escape of smoke and cinders.—*Manufacturer.*

"RACKAROCK" is beginning to excite attention abroad, and is commented upon very favorably by English mining engineers. The compound is designed mainly to escape from the difficulties of manufacture and transport that now attend the high explosives. It consists of two ingredients, each in itself non-explosive, and these two are mixed at the mine. In this way it may be manufactured in any place, without license or restriction of any sort, and sent by railroad as ordinary goods.

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, APRIL, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., JUNE 5, 1884.

CUSTOMS DISTRICTS.	MINERAL CRUDE.		NAPHTHAS.		ILLUMINATING.		LUBRICATING AND PARAFFINE OIL.		RESIDUUM.		TOTAL.	
	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.
Boston & Charlestown, Mass.	.....	....	1,000	110	376,540	49,025	17,919	4,376	4,620	403	400,079	53,914
New York, N. Y.	5,185,177	450,452	30,654	4,414	22,645,841	2,185,662	827,046	162,139	273,630	19,922	28,962,348	2,822,589
Philadelphia, Pa.	33,249	2,494	.....	....	3,337,601	343,483	174,450	34,760	.....	....	3,545,300	380,737
Baltimore. Md.	.....	....	.....	....	10,897	1,350	.....	....	206,346	11,782	217,243	13,132
San Francisco, Cal.	.....	....	4,500	981	44,740	8,840	359	305	.....	....	49,599	10,126
All other districts.	.....	....	5,808	688	76,229	9,914	4,019	1,086	1,260	240	87,316	11,928
Total for Apr. 1884	5,218,426	452,946	41,962	6,193	26,491,848	2,598,274	1,023,793	202,666	485,856	32,347	33,261,885	3,292,426
Total for Apr. 1883	1,831,863	140,399	706,738	49,945	30,953,378	2,780,006	782,607	173,354	340,410	28,788	34,614,996	3,172,492
Total for 9 months, ended Apr. 30, 1884	55,380,467	4 365,174	13,007,236	898,329	335,182,727	30,861,068	8,963,513	1 855,684	4,439,232	291,989	416,973,175	38,272,244
Total for 9 months, ended Apr. 30, 1883	41,770,603	3 109,704	14,386,284	1 102,241	327,836,518	28,734,864	8,297,971	1 921,534	4,649,778	327,522	396,941,154	35,195,865

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	May. 24, 1884. Barrels.	Apr. 19, 1884. Barrels.
London	262,346	289,730
Trieste	44,817	53,154
Seven Continental Ports	1,605,470	1,436,816
Total Stocks afloat and ashore	1,912,633	1,779,700
Increase in Stocks since April 19		132,933

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS MAY 24, 1884.

	Stocks W'k end'g May 24.		Stocks Afloat W'k end'g May 24.		Unloading W'k end'g May 24.		Grand Total Stocks Afloat & Unloading.		Receipts. Jan. 1 to May 24.		Shipments Jan. 1 to May 24.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	299,293	255,827	89,311	6,519	31,500	...	420,104	262.346	277,002	147,308	221,159	255,070
Trieste	18,484	44,817	7,455	...	...	...	25.939	44,817	29,039	109,370	78,419	74.036
Bremen	754,857	760,166	94,165	70,054	41,000	66,900	890,022	897,120	388,215	304,748	389,499	369,834
Hamburg	172,169	135,139	167,691	85,283	82,100	75,500	421,960	295,922	237,023	350,178	263,775	332,605
Antwerp	172,392	129,422	42,467	23,801	79,500	37,000	294,359	190,223	231,683	275,956	246,143	354,809
Rotterdam	36,861	50,718	43,262	26,713	4,000	6,700	84,123	84,131	40,703	82,888	79,023	82,684
Amsterdam	37,268	50,372	14,340	7,847	24,000	7,000	75,608	65,219	63,736	128,397	75,180	103,388
Stettin	45,556	20,347	11,171	13,769	8,600	31,600	65,327	65,716	55,376	33,045	43,005	72,535
Danzig	10,100	2,418	...	4,721	...	...	10,100	7,139	19,258	11,964	32,089	25,593
Total	1,229,203	1,148,582	373,096	232,188	239,200	224,700	1,841,499	1,605,470	1,035,994	1,187,176	1,128,714	1,341,448

	1881.	1882.	1883.	1884.
Total stocks exclusive Danzig, London and Trieste	639,466	1,024,990	1,229,203	1,148,582
Total afloat, exclusive Danzig, London and Trieste	141,844	254,102	373,096	232,188
Total unloading, exclusive Danzig, London and Trieste	217,400	172,200	239.200	224,700
Grand Total exclusive Danzig, London and Trieste	998,710	1,451,292	1,841,499	1,605,470
Total Shipments exclusive Danzig, London and Trieste	24,351	20,066	27,830	41,467
Total Shipments since January 1, exclusive Danzig, London and Trieste	1,181,787	1,034,955	1,128,714	1,341,448

THE CRUDE MARKET FOR APRIL, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Highest.	Lowest.	Closed.	Oil City. Opened.	Highest.	Lowest.	Closed.	New York. Opened.	Highest.	Lowest.	Closed.	Pittsburgh. Opened.	Highest.	Lowest.	Closed.
T	1	97½	99¼	96½	96½	97¼	99¼	96⅜	96⅜	97⅝	99⅛	96¾	96¾	97½	99¼	96⅝	96⅝
F	2	97	100	97	99¾	96⅝	99⅝	96⅝	99⅝	97⅛	100	97⅛	99¾	97½	100	97½	99⅞
S	3	99⅞	102¼	99¼	101⅛	99⅞	102¼	99⅜	101⅜	99⅞	101⅞	99½	101⅜	99¾	102⅛	99⅜	101½
M	5	101¾	103½	101½	102	101½	103¼	101½	102½	101¾	103⅛	101½	101⅞	101⅝	103⅝	101⅝	102
T	6	102	102⅜	96	96½	102	102⅜	95⅞	96½	102⅛	102½	96	96¾	102¼	102⅜	96	96½
W	7	96¾	97	94⅞	96½	97¼	97½	94⅞	96¼	97	97⅛	94⅞	96⅝	97¼	97⅜	95	96
T	8	96¾	98	95⅞	96¼	96½	98	95¾	96¼	96¾	98	96¾	96⅛	97	97⅞	95⅞	96⅛
F	9	95⅞	96⅞	95⅝	96⅛	95⅛	97⅛	95¾	96⅝	95¾	97⅛	95¾	95⅞	96⅛	97	95¾	96
S	10	95⅝	95⅝	93¾	94⅜	95½	95⅝	93¾	94¾	95½	95⅝	93⅞	94½	95⅜	95⅝	93⅝	94½
M	12	94⅝	94¾	92⅜	93⅝	94½	94¾	92½	93¾	94¼	94¾	92½	93¼	94⅝	94⅝	92⅝	93¾
T	13	93⅜	93⅞	92⅜	92⅜	93⅜	93⅞	92½	92½	94⅜	93⅞	92⅜	92½	93¼	93⅞	92⅜	92⅜
W	14	91⅝	91⅝	81	82½	91¼	91¼	81	83¼	91	91⅛	81	81½	91¼	91¼	81⅝	83
T	15	81	85⅜	76	76¾	82	85½	76½	77½	83	84½	73¾	73¾	82	85⅜	76½	77½
F	16	76	78	66	77¾	76¾	78½	65½	77⅞	74	78½	65	77½	76	78½	67	77
S	17	78½	81⅝	75⅝	81½	80	81¾	75½	81⅝	79	81	74	79¾	80½	81½	75¾	81½
M	19	81½	81½	77¼	77⅞	81	81¼	77⅜	77⅜	80½	80½	76¾	77⅞	80⅞	80⅞	77½	77⅝
T	20	78	78½	75½	75¾	77½	78⅜	75	75¾	78½	79	75⅜	76	77	78	75¼	75⅜
W	21	76¼	76⅝	70	73⅞	76⅛	76¼	69⅛	74½	76	76	69⅞	74	75¾	75¾	69⅛	74½
T	22	73¾	76	73	75½	73	76⅝	72¾	75½	74	76	73	75⅞	73	76⅝	73	75¼
F	23	75½	75½	73¼	73¾	75	75¼	73¼	74	75⅛	75⅛	73¼	73⅞	75	75	73⅛	73⅜
S	24	73¾	74	72⅝	72⅛	74	74	72¾	72⅞	73½	74⅛	72¾	72⅞	73¼	73¼	72¼	72⅞
M	26	73	74¾	72¾	74¾	73	74⅞	72¾	74¾	72½	74¾	72½	74¾	73	74⅜	72⅝	74¼
T	27	74¾	80	74⅜	79⅜	74⅜	80	74⅜	79¼	74¾	79⅝	74½	79⅜	74½	80	74¼	79⅜
W	28	79¼	79¼	76⅝	77	78½	79	76⅝	76⅞	78¾	79¼	76¾	77⅛	79	79	76⅝	76⅞
T	29	76⅝	79½	76	77⅝	76½	79⅜	75¾	77½	76	79½	75¾	77⅝	76⅛	79⅛	75½	77¾
F	30																
S	31	77½	78¾	76¾	77½	77¼	78⅞	77⅛	77⅝	77¾	78⅞	77	77⅝	77⅛	78¾	77⅛	77⅝

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	APRIL, 1884. Wells.	Prod'n.	Dry.	MAY 1884. Wells.	Prod'n.	Dry.
Scio	5	47	.	11	77	1
Alma	31	284	.	17	156	.
Wirt	4	30	1	7	65	1
Bolivar	21	168	.	27	244	.
Clarksville	7	43	2	9	75	1
Genesee	7	59	.	6	64	.
Miscellaneous	3	.	3	3	.	3
Total	78	631	6	80	681	5

BRADFORD FIELD.

Division of Field.	APRIL. Wells.	Prod'n.	Dry.	MAY. Wells.	Prod'n.	Dry.
E. & W. Branches	35	285	1	25	175	3
Kendall Creek	12	85	.	9	75	.
Foster Brook	14	144	.	16	156	.
Four Mile	18	121	.	17	166	.
Indian&Meeks Cr'ks	16	135	.	8	72	.
Cole Creek	7	118	.	10	253	.
Kinzua	8	82	1	6	39	1
Total	105	970	2	91	936	4

WARREN AND FOREST.

District	APRIL. Wells.	Prod'n.	Dry.	MAY. Wells.	Prod'n.	Dry.
Glade	18	122	5	27	634	8
Clarendon	28	166	1	26	173	.
Tiona	14	85	.	16	94	.
Cooper	18	607	1	20	455	2
Balltown	5	140	.	7	176	.
Miscellaneous	2	.	2	2	.	2
Total	85	1120	9	98	1532	12

LOWER COUNTRY.

District	APRIL. Wells.	Prod'n.	Dry.	MAY. Wells.	Prod'n.	Dry.
Venango	26	260	3	31	208	5
Clarion	1	.	1	3	4	2
Butler and Armstrong	9	394	1	12	880	1
Total	36	654	5	46	1092	8

GRAND SUMMARY.

District.	APRIL. Wells.	Prod'n.	Dry.	MAY. Wells.	Prod'n.	Dry.
Allegany	78	631	6	80	681	5
Bradford	105	970	2	91	936	4
Warren and Forest	85	1110	9	98	1532	12
Lower Field	36	654	5	46	1092	8
April Total	304	3375	22	315	4241	29
May Total	315	4241	29			
Difference	11	866	7			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	MAY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	4	11	10	25	5	10	5	20
Alma	14	9	19	42	8	12	18	38
Wirt	6	.	6	12	5	.	6	11
Bolivar	13	8	20	41	8	8	8	24
Clarksville	7	3	8	18	3	2	9	14
Genesee	3	17	4	24	5	15	3	23
Miscellaneous	.	1	4	5	1	1	2	4
Total	47	49	71	167	35	48	51	134

BRADFORD FIELD.

Division of Field.	MAY. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	17	10	21	48	17	13	20	50
Kendall Creek	8	3	6	17	3	7	6	16
Foster Brook	13	1	12	26	5	1	10	16
Four Mile	12	7	16	35	12	8	7	27
Indian Creek	6	10	5	21	5	8	6	19
Cole Creek	4	2	10	16	3	3	9	15
Kinzua	6	.	6	12	5	2	8	15
Miscellaneous	.	.	.	.	.	.	.	.
Total	66	33	76	175	50	42	66	158

WARREN AND FOREST.

Division of Field.	MAY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	19	5	22	46	18	7	20	45
Clarendon	18	9	24	51	23	10	26	59
Tiona	8	1	12	21	10	1	9	20
Cooper	7	.	21	28	9	.	18	27
Balltown	4	.	5	9	6	1	4	11
Miscellaneous	4	2	3	9	4	2	5	11
Total	60	17	87	164	70	21	82	173

LOWER COUNTRY.

Division of Field.	MAY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	12	3	25	40	6	3	29	38
Clarion	2	0	2	4	0	0	1	1
Butler & Armstrong	10	1	17	28	4	2	25	31
Total	24	4	44	72	10	5	55	70

GRAND SUMMARY.

Field.	MAY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	47	49	71	167	35	48	51	134
Bradford	66	33	76	175	50	42	66	158
Warren & Forest	60	17	87	164	70	21	82	173
Lower Country	24	4	44	72	10	5	55	70
Total May 1	197	103	278	578	105	116	254	535
Total June 1	165	116	254	535				
Difference	32	13	24	43				

ASSOCIATED PRODUCERS.

On the 11th and 12th of June there was an earnest meeting at Bradford, Pa., of the prominent producers interested in devising means for bettering the depressed condition of the oil trade. There was a determination on the part of all present to avoid the spasmodic enthusiasm which has characterized other attempts at organization and to work persistently and quietly to bring about the desired end. The work begun before the panic was renewed with vigor. An organization was perfected over which permanent officers were elected. How the stern necessities of the hour are to be met will appear in the resolutions which were adopted and in the plans outlined. They aim to stop the drill as far as possible until the first of January, 1885, and will endeaver to have storage on oil reduced. Without an effort on the part of producers the drill was effectually stopped in all sections outside of Cherry Grove during the brief interval prior to the bursting of that bubble. The market has been drifting to a Cherry Grove level, but the causes are not so plain, and the situation is not likely to so readily right itself. With the market vibrating between present limits the drill in many parts of the field will cease its motion without any extraneous pressure being brought to bear on those who set it in motion.

The officers of the permanent organization are

as follows: President, H. L. Taylor; Vice Presidents, W. J. Young and David Kirk; Treasurer, F. W. Mitchell; Secretary, W. H. Johnson; Executive Committee, John L. McKinney, chairman; John Satterfield, J. A. Cadwallader, David Kirk, W. W. Hague, F. T. Coast, J. T. Jones, Bateman Goe, W. R. Weaver, C. S. Whitney, J. S. Davis, F. W. Andrews, James Amm, W. J Young, H. B. Porter.

The resolutions which are published below set forth in a definite manner the object and aims of the organization.

Your committee would recommend the adoption of the following resolutions:

WHEREAS, The continued increase of stocks of petroleum or visible supply, and the high rates of storage charged on the same, threaten the bankruptcy and ruin of all engaged in the petroleum industry; therefore,

Resolved, That the time has come for union, concession and mutual sacrifice on the part of the operators, storers and land owners. We therefore form ourselves into an association, the primary object of which shall be the suspension of operations, the reduction of storage rates, and whatever may be deemed beneficial by a majority of the association, and we invite all interested to join this association and shall expect them to do so.

Resolved, That nothing but a radical and complete suspension for at least six months, to be inaugurated at once, will do any good, and therefore that the form of an agreement approved by this association, be submitted to operators simultaneously and immediately in all parts of the oil country for their signatures, and to accomplish this the annexed committees are hereby appointed in every division of the field, as divided by the monthly reporters. The duties of said committees shall be to call upon all interested in their respective localities, to sign and agree to the same, and also to act as a patrol in watching and suppressing new work in their respective districts.

Resolved, That as time is important and heroic treatment necessary, presuming that every man in the present situation is favorable, we therefore have appointed as local committeemen the most active operators in their respective localities, without waiting to consult them, and we trust that all so appointed will accept, but should any decline we request them to advise the central agent of the same.

Resolved, That we shall regard the owners of any rig in which a string of tools is swinging on the 1st day of August next, or resuming operations before the expiration of the time set, as public and private enemies, men merely seeking to secure the advantage of the sacrifices of others, and that we shall place in the same category hardware and supply dealers, bankers or others giving credit to such operators, except in cases of exception granted by the Executive Committee, in such cases the facts shall be published.

Resolved, That the form of agreement approved by this meeting means that no new rig shall be commenced from this date, and no drilling commenced on a rig that has been standing for over twenty days, but that all present drilling wells shall be completed.

Resolved, That all producers signing the agreement give at the same time their daily average production for the month of May, 1884, and that to defray expenses an assessment of five cents per barrel on one day's production is hereby made thereon, and such signers be requested to forward the same to F. W. Mitchell, Treasurer, Oil City, Pa., without delay.

Resolved, That the Executive Committe, consisting of John Satterfield, W. W. Hague, W. R. Weaver, F. W. Andrews, J. L. McKinney, C. S. Whitney, David Kirk, F. T. Coast, J. A. Cadwallader, Bateman Goe, J. S. Davis, H. B. Porter, James Amm, W. J. Young is hereby appointed and placed in charge of the business of the association, and that they are hereby authorized to open an office in Bradford, appoint a salaried agent to conduct the business thereof, to whom all local committees shall report weekly any new work commenced, with the names of the owners for publication.

Resolved, That we regard the reduction of storage as of the utmost importance, and we hope the National Transit Company will sympathize with us in the present emergency and with us make some sacrifices for the common good.

That a committee consisting of J. L. McKinney, J. J. Carter, Bateman Goe, David Kirk and J. M. Fuller is hereby appointed to wait upon the National Transit officials and urge a concession in the rate of storage.

Resolved, That we request the press of the oil regions to aid and assist us in the present movement by every means in their power.

The following resolution by David Kirk, Esq., was also unanimously adopted:

Resolved, That we request the conference of oil exchanges and the National Transit Company to take into consideration a change in the methods of dealing in oil, substituting for the

present mode, that used in other speculative commodities, viz: cash, and futures, so that short sellers shall not realize directly the carrying rates.

The agreement to stop the drill, which John P. Zane and others are circulating among producers, reads as follows:

BRADFORD, Pa., June 11th, 1884.

We, the undersigned, for ourselves, as firms represented by us, and as officers of corporate companies, do hereby agree, each with the other, to start no new rigs or drilling wells (except when agreements exist enforcing development, in which case the Executive Committee shall consider and equitably adjust) from this date until January 1st, 1885; provided, three-fourths (¾) of the producers operating are signers to this agreement; and in the event of a party who will not sign this agreement or stop drilling on an adjoining property, we agree to submit such work to the Executive Committee and agree to be bound by their decision.

Over two hundred oil men up to this date, June 18, have signed, and the roll of signatures is daily growing larger.

MAY PRODUCTION REPORT.

Reports were received showing the amount of stocks at 6,801 Bradford wells May 1st, and 6,840 wells June 1st. The parties who owned 6,801 wells May 1st, had completed enough new ones to make the additional number June 1st. The average stocks per well May 1st were 63.2 barrels, and on June 1 the same wells gave an average of 60.8. The figures compared show a decrease of 2.4 barrels per well. The result of these reports is shown in the following summary:

Time.	No. Wells.	Gross Stocks.	Average per Well.
May 1, 1884	6,801	429,479	63.2
June 1, 1884	6,840	416,308	60.8
Difference	39	13,171	2.4

The number of wells in the Bradford field connected with the pipe lines June 1st is estimated at 13,225. Considering that the wells heard from show a fair average decrease in stocks for the entire field, the total reduction for May was 31,740 barrels, a daily average of 1,024 barrels. The daily average pipe line runs from wells in the Bradford field during May, by the National Transit and the Tidewater lines, were 34,946 barrels. Subtracting the decrease in stocks at wells from the pipe line runs, a fair estimate on Bradford's May production, would be:

	Barrels.
Average Daily Pipe Line Runs	34,946
Average Daily Decrease of Stocks at Wells	1,024
Bradford's May production, est	33,922
do April do do	32,442

According to the estimates made on the production for April and May, there was an increase during the latter month of 1,580 barrels. More old wells were torpedoed during the month, and a number of large wells at the Cole Creek front augmented the yield of that section.

THE ALLEGANY FIELD.

Reports of stocks at wells in the Allegany field are tabulated as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
May 1, 1884	1,047	56,569	54.0
June 1, 1884	1,055	50,014	47.4
Difference	8	6,485	6.6

The 1,055 Allegany wells heard from show a decrease of $6\frac{6}{10}$ barrels per well. The number of wells producing in the Allegany field May 1st is estimated at 3,593, and 3,663 June 1st.

From the preceding data the following statement is made:

Time.	No. Wells.	Average per Well.	Gross Stocks.
May 1, 1884	3,593	54.0	193,662
June 1, 1884	3,663	47.4	173,626
Difference	70	6.6	20,036

At this rate the total stocks at wells in the Allegany field decreased 20,036 barrels or a daily average decrease of 646 barrels. The average daily pipe line runs for the Allegany field during May were 12,193 barrels. Subtracting the decrease in stocks from the pipe line runs makes 11,547 barrels, the estimate on Allegany's production for May.

	Barrels.
Allegany's May production is estimated at	11,547
Allegany's April production is estimated at	11,848
Allegany's March production is estimated at	11,768
Allegany's February production is estimated at	11,607
Allegany's January production is estimated at	11,263
Allegany's December production is estimated at	12,437
Allegany's November production is estimated at	12,678
Allegany's October production is estimated at	13,089
Allegany's September production is estimated at	12,335
Allegany's August production is estimated at	12,264
Allegany's July production is estimated at	12,345

WARREN, FOREST AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Warren, Forest and the Lower Country. The number of wells on the first of each month, with their averages, are contained in the following statement:

Field.	No. Wells. May 1.	No. Wells. June 1.	Average per Well. May 1.	Average per Well June 1.
Clarendon & Tiona	122	132	46	51
Cherry Grove	51	58	112	94
Cooper District	137	144	155	149
Lower Country	75	75	53	54

Accepting the outside runs as representing the production, an estimate on the yield of the field for April and May would be as follows:

Field.	April. Barrels.	May. Barrels.
Allegany	11,848	11,547
Bradford	32,442	33,922
Outside runs	19,162	19,549
Total	63,452	65,018

These estimates denote an increase of 1,566 barrels over the production of the preceding month. In the outside fields the runs show an increase in the Wardwell and Baldridge sections and a decrease at Balltown and Cooper.

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THE PETROLEUM AGE.

Vol. III. BRADFORD, PA., JULY, 1884. No. 6.

THE VALUE OF PETROLEUM AS A FUEL FOR METALLURGICAL PURPOSES.

BY H. M. HOWE, M. E., BOSTON, MASS.

As a great amount of money and of valuable time and energy is now expending in attempts to introduce vaporized petroleum for fuel for metallurgical purposes, and as these attempts have been made to a certain extent blindly, and without ascertaining whether there was any probability that a given amount of work could be done as cheaply with petroleum as with coal, the following remarks are written with the view of putting engineers and capitalists contemplating these attempts on their guard, and of pointing out to them how small, how exceedingly small, the chance is, that petroleum can compete with coal as long as any thing like the present relation between the prices of the two continues.

The many attempts that have lately been made to substitute petroleum for coal, all inevitably destined to fail, seem either to have been made without any reflection whatever as to the relative calorific powers of the two forms of fuel, or else to have been based on a crude, vague notion that, if you can only burn your petroleum as thoroughly and utilize its heat as thoroughly as you do with coal, you will have a much cheaper fuel; that is, that there is more available calorific power in a dollar's worth of petroleum than in a dollar's worth of coal. This fallacious notion has probably been greatly favored by the confusion arising from the fact that coal is sold by weight and petroleum by measure. To say that 80 gallons of petroleum contain as much calorific power as a ton of coal does not sound as startling as it does to say that there is as much calorific power in one pound of petroleum as in 4.3 pounds of coal; yet the two statements mean precisely the same. The advocates of petroleum are constantly telling us what calorific power petroleum ought to have, according to calculation, owing to its high percentage of hydrogen, and what it has done in their own experiments. But people seem to have generally overlooked the fact that the actual calorific power of petroleum has been determined by a most eminent, competent, and wholly disinterested authority, and that there is no need of looking to the statements of interested persons or of conducting enormously costly experiments to see how it compares with that of coal, since the matter is already one of record.

At the request of the Emperor Napoleon the Third, the illustrious Henri St. Clair Deville investigated elaborately the calorific power of petroleum, and gave the world his results. These are readily accessible in every large public library in the country; and it is perhaps surprising if not mortifying that they should not have prevented the enormous expenditure of money that has taken place in the last few years in experimenting on a gigantic scale on this subject.

Comparing the calorific power of petroleum, as determined by him, with that of coal, we learn that, allowing for the presence of 11 per cent. of ash and water, the complete combustion of one pound of coal (such as yields from 60 to 74 per cent. of coke) generates about 80 per cent. as much available heat as does one pound of petroleum; while with coals yielding 74 per cent. and upwards of coke, complete combustion generates on an average about 85 per cent. as much heat as is yielded by the combustion of an equal weight of petroleum. Turning pounds of petroleum into gallons, there is, roughly speaking, as much calorific power in 2240 pounds of coal (including ash and water) as there is in about 302 gallons of petroleum. At the prices ruling here for coal by the cargo and petroleum in large tank lots, our 302 gallons of petroleum would cost about $14.75, or more than three times as much as a ton of coal. Now, it seems to me that, if the engineers and capitalists who have been carrying on gigantic experiments in the use of petroleum had clearly understood this most important fact, that petroleum costs three times as much per unit of calorific power as coal does, it ought to have been pretty hard to induce them to undertake the enterprise. It is to be remembered that the calorific power of petroleum that I have quoted is not the theoretical but the actual power. It is not derived from theoretical considerations, but from direct actual tests most carefully con-

ducted. The results of such tests are entitled to the same kind of confidence as are those of the chemical analysis of a trustworthy chemist; and it is no more likely that they can be controverted by large scale tests than that the decomposition of water on a large scale will show it to contain more than 11.11 per cent. of hydrogen.

Now, is it probable that this enormous disadvantage under which petroleum suffers, owing to its vastly greater first cost per unit of calorific power, can be compensated for by its peculiar advantages? It seems most unlikely; one is almost tempted to say that it is absurd to expect it.

We are told much of the great saving in handling the material, since petroleum can be fed into the furnace by simply starting a steam-pump, while coal had to be shoveled and worked over, its clinkers broken up, and its ashes removed. Were there any thing approaching equality in the cost of the two materials, then the greater ease of handling petroleum would tell heavily in its favor. But, when we consider that petroleum equal in calorific power to a ton of coal costs nearly $15, the comparatively trifling saving in the handling of material sinks into insignificance. The trouble and labor in handling the ton of coal form but a trifling fraction of the extra $10, which its equivalent in petroleum would cost. We might nearly as well advocate the use of gold instead of iron for ship cables on account of its freedom from rust. Saving in the cost of repairing the fire-box is also urged in favor of petroleum. But this also is too light a matter to avail much in compensation for the fearful first cost of the fluid fuel.

The advocates of the use of petroleum might perhaps at the first blush hope to offset its greater first cost by obtaining greater efficiency than is possible with coal, that is, by utilizing a greater portion of the heat generated by the combustion of petroleum than can be utilized in the case of coal; but a little reflection should dispel this hope. While it must be admitted that experiment may show that a somewhat higher efficiency is attainable with petroleum than with coal, it does seem preposterous to expect that, with equally well-devised forms of apparatus, the efficiency of the former can be thrice or even twice as great as that of the latter. Of course, the efficiency of petroleum in highly efficient furnaces, such as the Siemens and Ponsard furnaces, might well be thrice as great as that of coal in very wasteful ones (for example, in direct-firing crucible furnaces). But no reason appears why the efficiency of petroleum should be at all greater than that of coal in equally well-designed furnaces.

It is true that the efficiency of coal is generally very low, sometimes less than 2 per cent of the calorific power of the fuel being utilized. But this low efficiency is only slightly, if at all, to be ascribed to the form of fuel used, being due to the form of furnace employed; and this in turn is due to the requirements of the metallurgical process employed and but to a small extent, if at all, to the condition of the fuel. The low efficiency of even well-designed regenerative reverberatories is due to the immense losses by radiation and the imperfect contact between the burning fuel and the material to be heated. In non-regenerative reverberatories, besides these heavy causes of loss, we have a still greater one in the high temperature at which the products of combustion escape from the furnace. Thus, while in some kinds of furnaces the efficiency is as low as two per cent., it rises in well-designed Siemens furnaces to 20 per cent.; in cupola furnaces, where the loss by radiation is small and where efficiency is promoted by the intimate contact between the fuel and the substance to be melted, the efficiency rises, according to Gruner, to even 50 per cent.; while in iron blast-furnaces, according to this eminent authority, even 80 per cent. of the heat generated is utilized (the complete combustion of the fuel both in cupolas and blast-furnaces being of course impossible).

As I have already said, this variation from an efficiency of two per cent. to even 80 per cent. is due almost wholly to the form of apparatus employed, and to the necessities of the metallurgical operations performed, and not to the nature of the fuel. This is clearly illustrated in the case of coke, one and the same fuel giving an efficiency of two per cent. in the crucible furnace, 20 per cent. in the Siemens open-hearth furnace, and 80 per cent in the blast-furnace. The form of apparatus is in each case fitted to the metallurgical process employed. If we could make crucible steel or open-hearth steel in the blast-furnace with a fuel efficiency of 80 per cent., we would do so.

Now, to suppose that for any ordinary and extended application, be it for raising steam, puddling, making open-hearth steel, or whatever you please, a furnace can be designed, suitable to the particular process or operation, in which petroleum will have thrice as great efficiency as can be obtained with coal in the most economical furnace in which the latter fuel can be used for

that same operation, seems most rash (I had almost said wildly absurd). Of course, there may arise extraordinary operations in which petroleum may offer special advantages counterbalancing its greater cost.

Against what has been said above may be quoted various results said to have been obtained in practice. Thus, we have had in the papers astounding results of the small amount of petroleum required to heat a ton of ingots. Well, there is a difference between heating cold ingots and soaking hot ones. Again, apparently wonderful results have been obtained (so we are told) with open-hearth steel furnaces. Some of these I have had opportunity of investigating, and the efficiency of the petroleum was indeed quite high. But this was owing to the furnace being run at a much higher temperature than is wise. We all know that, whether your fuel be coal, or petroleum, or sawdust, or wet tan, with a properly designed Siemens furnace you can obtain a temperature that will melt down any refractory material. Now, it is always a question how hot it pays to run an open-hearth furnace. If you run it so hot that your furnace melts down in a week, your fuel consumption per ton of ingots may be very low, but it does not pay. In these cases, I have not the slightest doubt that about as good efficiency could have been obtained with coal as was obtained with petroleum, if it had been thought wise to sacrifice the life of the furnace to saving fuel; for it goes without saying that you can get as high a temperature with coal as with petroleum, if your apparatus is designed for that end.

Beyond all this, there can not be the slightest doubt that many of the statements that have appeared in the technical papers in the last year as to the consumption of petroleum in accomplishing a given result have been grossly inaccurate (which is putting it mildly), though I do not mean to imply that they have been intentionally so.

In fine, I cannot believe that petroleum can replace coal for any ordinary or extended metallurgical purpose until the cost of 300 gallons (or say 1900 pounds) of petroleum shall be somewhere about the same as that of a ton of coal. There may be points in the world where something approaching this relation between the prices of coal and petroleum exists, as, for instance, in the immediate neighborhood of petroleum-fields and far removed from coal. Such conditions may exist on the west coast of South America in certain probably very limited regions, or at certain places in India.

The writer knows of no place in North America where the use of petroleum has been found economical, where the facts have been carefully and systematically investigated by competent and disinterested engineers. On the other hand, there are important and extensive establishments where its use has been thoroughly tested on an enormous scale, for may months consecutively, in furnaces designed and remodeled by its strongest advocates—establishments where the ratio of the price of petroleum to that of coal is comparatively low; and in these, its use has been found not only more costly but vastly more costly than that of coal, even making all possible allowances for its undoubted advantages of saving in handling and in repairs.—*Engineering and Mining Journal.*

"WHY IS THIS THUSLY?"

A bull on this market has troubles and cares,
His way is thickly strewn with pitfalls and snares,
No sooner does oil go climbing up the stairs
Than something's bound to strike it down unawares.
Who can blame the bull, if he howls 'round and swears;
What if he "lays down" buying all the oil he dares?
Storage and freight go on; in vain are all his prayers
When Providence and wild-catters side in with the bears.

THE paraffine or wax paper, which is used in wrapping up candy, butter, cheese, provisions, tobacco, soap, druggists' supplies, kid gloves, hardware and all other articles which it is wished to keep air and moisture tight, is meeting with a largely increasing demand every year. It is made by running tissue paper in the web, by means of rolls through a bath of hot paraffine, with which it becomes thoroughly saturated. After leaving the bath, the paper passes through other rolls, which even the paraffine. It is then cooled by fans which "sets" the paraffine, and afterward wound into rolls. In 1877, 14,500 reams of this paper were produced; in 1878, 28,000, and in 1879, 58,000 reams. In 1883, the product had reached 300,000 reams, and this year, it is estimated 350,000 reams will be manufactured. The paper sells at $1 per ream. It was patented in 1877 by New York parties, and has been frequently infringed but the courts have uniformly sustained the patentees, when the matter has been brought before them, in suits at law.

THE NATURAL GAS QUESTION IN PITTSBURGH.

The negotiations looking to a consolidation of all the interests of the Penn Fuel Company with the Fuel Gas Company, which have been in progress for some time past, have now reached a mutually satisfactory condition. The way matters stood the Fuel Gas Company seemed to have most of the law, and the Penn Company most of the business. The latter, it is claimed by the Fuel Company, rated their commodity at too high a figure. The Fuel Company plunged the legal form known as Judge Stowe's decision into the flanks of their adversary, and the Penn Company responded with the threat that they would hang the matter up in the courts for five years before a decision could be had from the court of last resort, namely, the United States Supreme Court, and would then in all probability gain the case on the plea that exclusive charters are manifestly contrary to public policy, and would, if enforced, result in riot among the populace. In the meantime, they would enjoy the handsome revenue which their plant afforded them.

The unlooked for success of the Westinghouse well, brought a new and powerful agency in the business, that was entirely unexpected, and the two rival companies have been forced to enter into arrangements, which, though not a consolidation, obviate the necessity of any further clashing of interests.

The councils of the city of Pittsburgh have granted to George Westinghouse, Jr., and a corporation now being formed, unlimited right of way, to lay natural gas lines through the city. It is shrewdly suspected that the corporation mentioned above is a combination of the Standard Oil Company and the National Transit Company. This gives Mr. Westinghouse an opportunity to dispose of the surplus gas from his roarer, and introduces another competing element among the natural gas companies. Some of the Pittsburghers are prophesying a strong combination of the leading companies that will create a practical monopoly of the entire gas business and rob the people of many of the benefits they expect to derive from the introduction of the hydron-carbon fuel.

NATURAL GAS PROFITS.

A reporter of the Pittsburgh *Chronicle - Telegraph*, who has been investigating the subject of the profits of natural gas companies, writes as follows:

"The present profitableness of the developments is large, much larger than persons not thoroughly acquainted with the business would fancy. The natural gas company which owns a line of pipe to Butler county, and intended at the outstart to supply Spang, Chalfant & Co.'s works at Sharpsburg, and Graff, Bennett & Co.'s works at Girty's Run, is said to have a revenue of $38,000 per annum from the firm of Sprang, Chalfant & Co. alone. It was discovered after building their line that owing to the shortage of gas at their wells, friction in the pipes, etc., the supply at Graff, Bennett & Co.'s mill did not amount to much, so that Sprang, Chalfant & Co. may be called their only customer.

"The Edgar Thompson Steel Works at Bessemer station have almost discarded the use of coal under their boilers, and elsewhere about the great works, and use natural gas brought by the Acme Company exclusively for them, from Murraysville. It is said the Edgar Thompson Company pay $120,000 per annum for this gas, which is much cheaper than coal in first cost, besides a great saving in labor, both as regards the handling of the coal and the ashes.

"Accurate information could not be obtained regarding the Penn Fuel Company, of which Messrs. Emerson & Pew seem to be the owners so far as the public are concerned, but in which company Mr. Felix R. Brunot is reported to own a large block of stock. Their income, must, however, be enormous as it has been learned that their written contracts now in force in one ward of the city alone amount to $25,000 per month or $300,000 per annum, besides contracts known to exist with the city water works and others aggregating many thousands of dollars. Within two weeks past the Standard Oil Company offered the Penn Fuel Company for their plant and contracts as they exist, $500,000 in cash. This offer is not mere street gossip, but the proof can be furnished if necessary. It is said the offer was regarded by the Standard Oil Company as a tempting bait that the Penn Fuel Company could not refuse, in view of Judge Stowe's decision against them. Just how the Standard Company proposed surmounting this obstacle has not been definitely ascertained, but it is presumed that in their choice assortment of stock-in-trade, they have a few omnibus charters left which will admit of their running anything in this State, from a banana stand to a bonanza mine."

A gentleman who has had considerable experience in the use of natural gas makes the following figures on the relative cost of natural gas and coal:

"It requires 50 feet of gas per hour for one fire-place, or 1,200 feet a day. Five rooms constantly heated for 90 days, two for say 90 more and the kitchen 5 hours a day all the year, makes 847,000 cubic feet a year in a ten-room house. At 20 cents this would cost $169.40, or just about double the cost of coal at 9 cents a bushel. Twenty cents is too high for gas. By the report to the Engineers' Society the calorific value of a thousand feet of gas is placed at 8 cents when coal is 6 cents per bushel. At the outside gas should not cost more than fifteen cents per thousand cubic feet."

MORE GAS WELLS IN THE CITY.

Property owners in the Twenty-second ward of the city of Pittsburgh, are organizing to pool their issues on the question of natural gas. The idea is to form a company of the land owners, issue a share of stock for each acre of ground, and place the gas development in charge of trustees. It is probable that from one to three thousand acres will be represented in the scheme and drilling will be done according to a regular system. Profits will be divided on the shares regardless on whose property the gas shall be found. The first well will be put down on the lands of Major Howard Morton, corner of Forward and Murray avenues, near the head of Four Mile Run. The Allegheny River well owners company are drilling for gas on Thirty-first street. Another well is under way on the Dithridge property, Brushton street, in the Nineteenth ward. It is owned by Paul Zimmerman, and is located east of the Westinghouse well. A well is also to be drilled on Larrimer avenue, East End.

Another gas well was struck near Pittsburgh on the 9th of June. The new well is located three and a half miles from Wood Lawn, a station on the P. & L. E. railroad, twenty-one miles west of Pittsburgh. This last strike is four miles south of the Rochester gasser, now used by the Rochester Tumbler Works, and is owned by T. J. Vandergrift and others of the smoky city. It is twelve hundred feet deep and is said to be as good a well as the Westinghouse. It is situated on Raccoon creek in Washington county, opposite the towns of Beaver and Industry on the Ohio river. Mr. Vandergrift has leased 6000 acres of land in the vicinity of his well and is negotiating with a number of manufacturing establishments at Rochester, New Brighton, Fallston and Beaver Falls, with a view to supplying them with his valuable product.

THE NATURAL GAS BELT.

A careful tracing of the natural gas line indicates that what is supposed to be the main belt follows the general line of the oil developments between Bradford and the Smith's Ferry region. This is a line running about 45° to the meridian, or from northeast to southwest. The natural gas seems to follow parallel and about twenty to twenty-five miles easterly. Local observation shows that, starting from the Tarentum gas wells, the line runs in the vicinity of Hulton, five miles southwesterly; Wildwood Station, Allegheny Valley Railroad, about two and a half miles further; Westinghouse, about one and a half miles, and the Washington wells about twenty miles. The line then continues on the 45° to the West Virginia region. The number of points on this line from Tarentum to Moundsville, that have been developed, prove that it is correct. The Westinghouse is also on a direct east and west line, about 14 miles distant from the Murraysville region, and Boyd's hill is on the same line. The well at this latter point was bored some twenty years ago, and salt water, and perhaps disgust at getting no oil, stopped proceedings; but gas was struck and is burning to this day. Likewise gas was struck some years ago on a still further extension of this east and west line at Taylor's Salt Works, Sawmill Run, Thirty-sixth ward, and now produces enough gas for use around the works. It may be, however, that this is not an intersecting line of the main belt at all, but simply an indication that the belt is wide. This would seem the case, inasmuch as half a century ago a well at the Salt Works, mouth of Nine Mile Run, Monongahela river, got gas and still produces. It will be observed that in the three instances mentioned the drill went for oil or salt and there was no disposition on the part of the projectors to take the hint nature gave them and seek for gas.

PITTSBURGH'S FIRST GAS WELL.

The excitement over the Westinghouse well, has caused the "ancient residenter" to shake his hoary locks, call up memories of the by gone days and tell the following tale of a gas well discovered forty years ago.

As early as 1822, George Anshutz had salt works in successful operation on the South Side. Ten years later he commenced boring a salt well at a point about 500 yards below Saw Mill Run. Small veins of gas were tapped at various depths but little attention was paid to them. When a depth of 480 feet was reached salt water was found in sufficient quantities for manufacturing purposes and the drill was stopped. But the

strong fluid soon proved rather weak, and the proprietor begun to urge the drill to a greater depth. Only a few feet had been drilled when a large volume of gas came pouring up and continued to come. However, little attention was paid to it, and the salt works ran on night and day as usual. One morning about 2 o'clock, while a German watchman was poking about the gas well with a tallow dip in his hand, the gas was ignited, and with a roar the flames leaped to a height of nearly one hundred feet. The astonished Teuton dropped the dip, and with the exclamation "Mine Gott in Himmel!" fled to a neighboring hill, where he remained for two hours contemplating the ruin he had wrought. In the meanwhile the flames had licked around the timbers of the derrick, and when it fell the salt works ignited.

They too disappeared, and in their wake followed eight or ten tenement houses and the stables, in which were eight or ten horses. When morning dawned there was a dreary waste where the salt works stood, except for the vast volume of flame which still roared from the mouth of the well. When Mr. Anshutz came along he took the coat of the German watchman which was lying near by, and getting on his knees threw it over the hole, while some workmen took a large iron plate and placed it over the coat. The flames stopped at once. Afterward it was decided not to continue operations for salt, and the hole drilled was closed up by driving a locust post into it. Time and the operations of the Marine railway soon covered up the gas question, to be re-opened 50 years afterward with great furore. The old residenter further states that the pipes are still in the ground at that spot and that the gas also can be found. He also ventures the opinion that from his recollection of the quality of the sand obtained at this well, he is certain that petroleum also exists. The people then had no idea what the gas was and never entertained any ideas of utilizing it in any way.

NATURAL gas was utilized in central and western New York as long ago as 1840. Many private houses burned gas for fuel in Ontario and Wayne counties, New York, and the towns of Fredonia and Westfield in Chautauqua county have for nearly forty years been lighted by natural gas found in the shales of the carboniferous series, cropping out there. Eastern Ohio also used gas forty years ago. In Virginia, the salt works of the upper Great Kanawha Valley, have been boiled by natural gas since 1850. Most of the discoveries of natural gas and oil have been brought about in boring wells for salt. The salt wells, opened at St. Stephens, in southern Alabama, during the late war, showed quantities of gas. Present developements seem to indicate that natural gas is more widely distributed than oil, and its effect on manufacturing, will be one of the marvels of the future.

WHISPERERS AND THE OIL TRADE.

The scandal mongers of the petroleum exchanges are never idle, but during the past two months they have been more than usually active. Scarcely a firm of prominence in the entire country has escaped their pernicious innuendoes or barefaced misstatements. They have forgotten for the moment to put forth improbable stories about fictitious wild cat wells, and are confining themselves to shaking the confidence of the trade by uttering malignant falsehoods in regard to the financial standing of individuals, corporations and firms. It is the earnest desire of all honest men to ferret out and expose such creatures as these. No punishment could be severe enough for the person who wilfully circulates rumors calculated to disturb and ruin the credit and commercial standing of business men. The New York Exchange lately held a meeting and passed the following resolution, which should commend itself to all exchanges in the land:

Resolved, That it is the sense of this exchange that the committee appointed to revise the constitution and by-laws should report for adoption the following rule: "Any member of this exchange who shall intimate, report as hearsay, or as a fact to any one, that a member of this exchange has failed to meet his contracts, either in or out of this exchange, when such is not the case, or shall intimate, report as hearsay, or as a fact, that any institution, firm or individual has failed, is about to fail or assign, or is in an insolvent condition, when such shall not subsequently prove to be the case, he shall either be suspended from the privileges of this exchange for at least ninety days, or be expelled, at the discretion of the Board of Directors."

ACCORDING to Professor Mendelyeff's analysis the Baku petroleum contains from 20 to 40 per cent. of lubricating matter, while the American contains but 7 per cent. of this substance. The wells will not average a depth of 500 feet. The deepest well yet drilled in that region is but 825 feet deep.

CRUDE MARKET FOR JUNE.

The apparent strength manifested by the crude market toward the close of May melted away with the lengthening of the June days, and the summer solstice saw the greatest depression thus far the present year. The highest point was reached on the third of the month, when a few sales were recorded at 79 cents. From this date on, it presented a series of struggles between 76 and 70, dropping to 69 cents on the 12th, reacting to 73½ on the 16th, and on the 19th going back to 66 with a rush. Two more days of depression followed until 50½, the lowest point of the month was touched on the floor of the Pittsburgh Exchange on the 21st. The market closed the same day at 55 cents and sold at 66 again on the 25th. The month closed with certificates tolerably free at 60 cents.

In many respects the course of the market resembles the memorable days of the summer of 1882. But at that time the oil market never appeared to sympathize so readily with the stock market as it does at present. There were fewer traders interested in the business of handling crude certificates, and the stock broker had not yet turned his attention to the oil market. The rapid rise that followed the collapse of Cherry Grove, and the subsequent decline inaugurated with the opening of the Cooper and Balltown fields were revelations to the metropolitan dealers in stocks and bonds. Oil leaped into prominence at a bound, and became the favorite toy of the speculative fraternity. The mystery manipulator and the New York stock jobber clasped hands and their united efforts swayed the ponderous regulator that pointed out the figure at which the oil producer must market his commodity to the petroleum consumers of the world.

In the light of the past history of crude values the present low figures should call for heavy investments in a product of such universal demand as petroleum. But a positive advance cannot be expected so long as Wall street wears a threatening aspect. The most radical bears must admit that oil is very cheap at 60 cents for 42 gallons of the commodity, and the continued success of the shut down movement may set in motion a boom upward as sudden and unexpected as any that have gone before, and one that a half dozen Gartlan gushers might be powerless to check.

Business was very light at the exchanges during June. The N. Y. Mining, Stock and National Petroleum is the only one that shows an increase in the amount of its transactions, and it now seems to be leading all the others.

THE CLEARANCES.

	June. Barrels.	May. Barrels.
Bradford Oil Exchange	85,084,000	151.252,000
Bradford Prod. Pet	35,842,000	32,924,000
Oil City	128,674,000	236,628,000
New York, N. Y. Pet	199,452,000	272,052,000
New York, National	304,527,000	303,868,000
Pittsburgh Oil (old)	6,160,000	11,000,000
Pittsburgh Petroleum (new)	85,895,000	190,085,000
Total	845,634,000	1,197,809,000

THE REFINED MARKET.

There was very little activity manifested in the refined market during June. Prices were very firm at the beginning of the month, but they gradually began to weaken, and fell off a full half cent at the end. Refiners seem to be anticipating a heavy demand from abroad, but the advantages are still in favor of the buyer. Several heavy transactions were reported in June at 7⅞ and 7¾ cents for 70 degree Abel test oil, this month's delivery, but nothing occurred to cause any anxiety for selling to exhibit itself.

Refined in cases has ruled at 9½ to 9¾ for 110° fire test, and there has been a fair demand for this kind of goods from Java and the Mediterranean. Domestic demand for refined naphtha and gasoline has been unimportant.

S. C. Joyce & Co., London, report that "markets still seem overweighted by the fact that there is too much of it; and they are letting us have the oil though we are below the import price in all positions. Stocks in London are 140,000 barrels below this time last year, but at the same time they are large average stocks, too much so to expect anything like a squeeze, and present values, although very low, must be good paying prices with crude oil so cheap. Russian petroleum is now here in quantity, and selling slowly. Doubtless it would be more popular if sweeter and more uniform. Also, both quality and price are between the two standard qualities of Prime or Standard White and Water White, which seriously impedes progress. It is either too good or too bad."

	New York. Cts.	Philadelphia. Cts.	Baltimore. Cts.	London and Liverpool. Pence.	Bremen. Marks.	Antwerp. Francs
M 2	8⅜	8	8	6⅜	7 40	18½
T 3	8⅜	8	8	6⅜	7 40	18½
W 4	8⅜	8	8	6⅜	7 40	18½
T 5	8⅜	8	8	6⅜	7 45	18½
F 6	8⅜	8	8	6⅜	7 45	18½
S 7	8⅜	8	8	6⅜	7 45	18½
M 9	8⅛	8	8	6⅜	7 40	18½
T 10	8⅛	8	8	6½	7 45	18½
W 11	8⅛	8	8	6½	7 45	18½
T 12	8⅛	7¾	7¾	6½	7 40	18⅜
F 13	8	7¾	7¾	6½	7 40	18⅜
S 14	8	7¾	7¾	6½	7 35	18¼
M 16	8⅛	7¾	7¾	6½	7 35	18¼
T 17	8	7¾	7¾	6½	7 35	18¼
W 18	8	7¾	7¾	6½	7 35	18¼
T 19	7⅞	7¾	7¾	6½	7 35	18¼
F 20	7¾	7½	7½	6½	7 15	18
S 21	7¾	7½	7½	6½	7 15	18
M 23	7⅞	7⅝	7⅝	6½	7 15	18
T 24	7⅞	7⅝	7⅝	6⅜	7 35	18⅛
W 25	8	7⅝	7⅝	6¼	7 40	18⅛
T 26	8	7⅝	7⅝	6¼	7 40	18⅛
F 27	8	7⅝	7⅝	6¼	7 35	18⅛
S 28	8	7⅝	7⅝	6¼	7 35	18⅛
M 30	7⅞	7⅝	7⅝	6¼	7 40	18⅛

THE NEW YORK NATIONAL PETROLEUM EXCHANGE.

The annual report of the New York Mining Stock and National Petroleum Exchange shows a most prosperous state of affairs. In capital, enterprise and membership this exchange now occupies the front rank and stands at the head of the list. The organization of the National Petroleum Exchange began in April, 1883, with a membership of 500 and a capital stock of $50,000. This number added to the 479 members of the Mining Stock Exchange, gave a total membership of 979. During the year ending with the 31st of May the membership has been further increased, so that there are now 1,375 members belonging to this exchange. The treasurer's report shows a surplus of cash on hand amounting to $210,495.14. Connected with the exchange is a system of assessment life insurance that guarantees the legatees or next of kin of members $8,000 in case of death. The assessment is now $7.50 on each membership when a death occurs. This system of insurance is a separate feature by itself, and calls for the establishment of a gratuity fund. There were twelve deaths during the year, and the fund shows a net surplus in the hands of the treasurer of $97,874.41, an increase over the surplus of last year of $70,153.18.

The amount of business, as shown by the clearances of oil certificates in this exchange has steadily increased from an average per diem in May, 1883, of 2,260,000 barrels to a daily average in April, 1884, of 12,800,000 barrels. The committee on news statistics in its report to President Morris says:

"The listing of pipe line certificates on the New York Mining Stock Exchange, and the subsequent consolidation with the National Petroleum Exchange in April, 1883, has proved a great success from a speculative point of view, and has worked great changes in the petroleum business during the fiscal year ending May 31st, 1884. It has brought the bulk of speculation in petroleum from the oil regions into New York, or more concisely, into Wall street. The members of this exchange were recruited from Wall street; they are stock brokers, former gold brokers, street speculators, grain and cotton operators. The amazing rapidity with which trading in petroleum has increased on the floor of the New York Mining Stock and National Petroleum Exchange is evidenced by the table of clearances, which shows an increase of 500 per cent. in 11 months, and judging from present appearances the limit is far from being reached.

"The influence which this enormous increase of speculation will have on prices is not easily determined, but it appears that in times of quiet and want of serious events in the oil business, it would act like a fly wheel and regulate fluctuations, reducing them in size; but in times of considerable changes, either in production or consumption, or supply of money, etc., in times when the entire trade becomes either bullish or bearish, that it would render fluctuations excessive in whatever direction the trade should act."

STOCKS DECREASED BY LIGHTNING.

At Cleveland on the 24th of May two tanks were struck by lightning. Three thousand barrels of oil, belonging to the Excelsior Refining Company and thirty thousand barrels of Clark Brothers & Co. were destroyed. The works of the two refineries are situated on adjacent properties in the eastern part of the city. The loss is put at $30,000.

Tank No. 298 of the National Transit Company at Karns City, in Butler county, was destroyed by lightning on the night of June 1st. It contained about 25,000 barrels of crude petroleum which loss was made good by an assessment of sixty-hundredths barrels on each thousand barrels of oil in the custody of the National Transit Company on that date.

During a heavy storm on Friday evening, May 23d, a large tank belonging to the Atlantic Refinery at Point Breeze, near Philadelphia, was struck by lightning. There was an immense stock of crude, refined and benzine on the grounds, and the fire was not checked until it had destroyed nearly the entire refinery.

In all there were 60 tanks, 37 large ones on the plateau and 20 in the "hollow" being destroyed. A new one in the "hollow" (not yet put in use) and an empty one on the plateau were not affected by the flames. Three others, inside a triangular embankment, some distance from those burned, escaped, although one in their vicinity, filled with benzine, took fire, but the flames were smothered by Robt. McKnight, a fireman, who went up a ladder to the manhole on top and placing a wet blanket over the vent kept it there until a volume of steam was injected into the aperture, thus stifling the burning vapor. A similar feat was performed by Lewis F. Louderback, another of the firemen, who said that two of the burning tanks in the hollow might have been treated in the same way were it not for the fear that the oil might have

escaped and cut off retreat to the higher ground.

An agitator holding 1540 barrels was surrounded by the flames for a long time, but it escaped along with one that had previously been pumped out. The loss on tanks and contents, the latter aggregating about 90,000 barrels, valued at $110,000, and the former about $100,000, is about $210,000. The loss on the brick bleachery building is estimated at $40,000; on the pumping houses, with engines and machinery, $100,000, and on the paraffine works and valuable machinery, $100,000, making the total loss about $450,000.

All the tanks belonging to the National Transit Company in this vicinity are located on the opposite side of the Schuylkill river, so that the loss falls entirely on the owners of the refinery and involves no general assessment.

A 6,000-barrel tank of oil belonging to the New York & Dennison Oil Company, at Tidioute, was destroyed by lightning June 19th.

Tank No. 1,423, of the National Transit Company, located at Colegrove, McKean county, containing 34,300 barrels of oil, was struck by lightning June 21st and destroyed. Vigorous shooting into the burning tank with the cannon used for that purpose, prevented a general overflow and saved three other iron tanks in close proximity. A force of 180 men engaged in throwing up embankments, confined the burning fluid as it escaped from the tank through the perforations made by the cannon balls. The loss entails an assessment of ninety-hundredths barrels per thousand upon all oil in custody of the company at the close of business on the 21st of June.

One hundred gallons of Russian crude petroleum will yield 27 gallons of kerosene or illuminating oil, 44 gallons of different grades of lubricating oil, 1 gallon of benzine, 3 gallons of gasolene, 1 gallon of vaseline and 14 gallons of liquid fuel. The remaining ten gallons are lost in refining.

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to July 5, for the years 1883, 1884, were as follows:

	1884. Gallons.	1883. Gallons.
From Boston	2,660,512	2,771,039
Philadelphia	34,684,220	34,545,985
Baltimore	5,679,999	5,024,520
Richmond	....	173,449
Total	43,024,731	42,514,993
From New York	186,586,467	208,301,761
Total exports from United States	229,611,198	250,816,754

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to July 9th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
Great Britain.—London	5,929,654	21,693,044
Liverpool	1,497,045	3,790,582
Bristol	792,831	1,102,484
Ireland	1,490,669	2,615,857
Other ports	2,666,631	3,834,201
Germany—Bremen	20,927,192	25,008,012
Hamburg	17,809,825	21,585,152
Konigsburg and Stettin	3,688,280	1,502,232
Dantzic	....	....
Other Ports	1,235,964	357,137
France—Marseilles	....	....
Havre	....	....
Norway and Sweden	3,552,245	4,358,270
Russia	103,981	1,113,981
Denmark	4,516,680	4,563,017
Belgium	15,749,156	19,368,654
Holland	11,300,586	7,735,699
Spain	70,000	50,770
Portugal	351,718	770,166
Gibraltar and Malta	2,548,550	725,380
Italy	1,252,367	1,043,005
Austria.—Trieste, etc	3,153,579	4,737,805
Greece	....	468,500
Turkey in Europe	1,238,020	1,830,441
Turkey in Asia	1,924,110	2,043,853
India	14,000,810	7,357,080
China, Japan, etc	14,106,690	15,866,430
East Indies	14,193,560	17,569,080
Africa.—Alexandria, etc. E	847,660	1,275,710
Canary Islands	39,000	88,695
Other Ports	1,356,032	2,617,653
Australia	1,055,849	1,120,948
New Zealand	394,928	284,240
Sandwich Islands	204,080	142,500
South America.—Brazil	2,117,277	2,801,667
Argentine Confederation	1,613,770	1,842,790
Chili and Peru	327,862	928,000
U. S. Columbia	248,784	122,936
Venezuela	369,425	348,016
Other Ports	46,300	103,461
Central America	148,633	83,774
Mexico	638,290	658,959
British North American Colonies	378,229	302,779
Cuba	293,601	131,270
British West Indies and Br. Guiana	861,466	979,283
Other West Indies	649,772	541,762
Total . . . . . Galls.	155,690,801	185,465,335

CRUDE.

	1884.	1883.
France.—Havre	4,593,673	3,427,004
Marseilles	2,058,792	1,519,136
Bordeaux	990,012	1,198,454
Dunkirk	2,841,593	3,078,018
Other Ports	4,428,258	2,841,499
Antwerp	....	....
Bremen	....	753,616
Norway and Sweden	....	62,374
Spain	6,165,269	4,725,991
Cuba	1,503,007	1,130,911
Other Ports	4,797,865	1,251,312
Total . . . . . Galls.	27,378,469	19,988,315

NAPHTHA.

	1884.	1883.
Great Britain	1,667,334	2,472,614
France	755,555	1,330,936
Germany	521,780	1,203,979
Other Europe	478,887	1,214,890
Various Ports	93,641	52,845
Total . . . . . Galls.	3,517,197	6,275,264

RESIDUUM.

	1884.	1883.
To all Ports	2,228,625	3,949,225

	Gallons.
Total Refined since January 1, actual shipments	158,130,137
do do do do crude equivalent	210,840,183
do Crude do do actual shipments	27,818,615
Grand Total Crude and Crude equivalent . . . . galls.	248,658,798
Same time, 1883	267,275,428

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, July 9, 1884:

Ports.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	33	33	15	4	.	85
Philadelphia	24	11	1	.	2	38
Baltimore	7	.	.	.	.	7
Boston	.	1	.	.	.	1
Total July 9	64	45	16	4	2	131
Total June 11	60	40	16	1	1	118
Difference	4	5	0	3	1	13

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590
April, 1884	34,370	12,261	19,162	65,793
May, 1884	34,946	12,193	19,549	66,688
June, 1884	35,701	11,672	19,977	67,350

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for June, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of June		2,567,668.80
Quantity of crude petroleum at close of June	2,708,144.18	
Less sediment and surplus	165,080.77	2,543,063.41
Receipts during June		292,112.43
Deliveries during June—to refiners	172,784.29	
" " " —to other parties	149,945.05	
		322,729.34
Outstanding certificates, accepted orders, etc.		1,993,000.00
Credit balances		550,063.41
Total liabilities June 30, 1884		2,543,063.41

MAY SUMMARY.

		Barrels.
Quantity of crude petroleum in custody at beginning of May		2,594,333.84
Quantity of crude petroleum at close of May	2,723,343.80	
Less sediment and surplus	155,675.00	
		2,567,668.80
Receipts during May		303,046.74
Deliveries during May—to refiners	189,066.04	
" " " —to other parties	149,446.56	
		338,512.60
Outstanding certificates, accepted orders, etc.		1,976,000.00
Credit balances		591,668.80
Total liabilities May 31, 1884		2,567,668.80

SUMMARY of the statements of the National Transit Co,. for May and June 1884.

	JUNE.	MAY.
Receipts from all sources	1,949,395.34	2,150,316.08
Deliveries	1,641,738.72	1,543,756.82
Gross stocks end of month	38,749,931.08	38,236,941.00
Sediment and surplus	2,805,526.19	2,595,055.49
Total liabilities end of month	35,944,404.89	35,641,885.51
Outstanding acceptances	29,603,038.60	29,285,000,00
Credit balances	6,341,366.29	6,356,885.51

The above receipts from all sources for June were made up as follows:

Transferred from United Pipe Lines, as reported to N. F. Hilton, Esq., representing the Conference of Oil Exchanges	89,704.60	
Less sediment and surplus		
Net amount from United Pipe Lines		89,704.60
Runs from wells		1,709,745.69
Received in iron tanks		149,945.05
Total barrels		1,949,395.34

The above receipts from all sources for May were made up as follows:

Transferred from United Pipe Line as reported to N. F. Hilton. representing Conference of Oil Exchanges	267,744.44	
Less sediment and surplus	8,922.45	
Net amount from United Pipe Lines		258,821.99
Runs from wells		1,742,047.53
Received in iron tanks		149,446.56
Total		2,150,316.08

SUMMARY of the statement by the United Pipe Lines July 10, 1884:

Outstanding acceptances and certificates, June 30	16,638.75
Credit balances	60,498.07
Total liabilities June 30	77,136.82
Gross stocks June 30	90,696.32
Sediment and surplus	13,559.50
Receipts from all sources	
Net stocks delivered to National Transit Co June	89,704.60

MAY SUMMARY.

Acceptances and certificates	67,637.75
Credit balances	99,203.67
Total liabilities	166,841.42
Gross stocks	180,557.86
Sediment and surplus	13,716.44
Receipts from all sources	
Total deliveries	258,821.99

RUNS, SHIPMENTS AND STOCKS.

RUNS OR RECEIPTS.

PIPE LINE.	JUNE, 1884.	MAY, 1884.
National Transit Co	1,709,745.69	1,742,047.53
Tidewater	292,112.43	303,046.74
Octave Oil Co	2,719.63	3,122.28
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	8,878.99	7,053.44
Cranberry Pipe Line	7,059.38	12,048.85
Total	2.020,516.12	2,067,318.84
Daily average	67,350.54	66,687.70

In the above runs only the oil received by the National Transit Co. directly from the wells, is included.

DELIVERIES OR SHIPMENTS.

PIPE LINE.	JUNE, 1884.	MAY, 1884.
National Transit Co	1,641,738.72	1,543,756.82
Tidewater	172,784.29	189,066.04
Octave Oil Co	1,861.98	3,678.97
Charley Run	.....	173.06
Shaffer Run	.....	173.00
Franklin (limited)	1,946 99	3,008.97
Cranberry Pipe Line	8,877.44	10,025.80
Total	1,827,209.42	1,749,882.66
Daily average shipments	60,906.98	56,447.82

In the above shipments for May only the oil delivered to refiners is included.

Daily excess of runs over shipments, June, 1884	6,443.56
Daily excess of runs over shipments, May, 1884	10,239.88
Daily excess of runs over shipments, April, 1884	11,020.89
Daily excess of runs over shipments, March, 1884	4,144.98
Daily exeess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

PIPE LINE.	JUNE 30, 1884.	MAY 31, 1884.
National Transit Co	35,944,404.89	35,641,885.51
Tidewater	2,543,063.41	2,567,668.80
Octave Oil Co	8,412.75	11,008.43
Charley Run	3,717.00	3,717.00
Shaffer Run	30,636.32	30,636,32
Franklin (limited)	34 193.26	27,668.68
Cranberry Pipe Line	24,283.60	26,101.66
United Pipe Line	77,136.82	166,841.42
Total	38,665,848.05	38,475,527.82

Stocks increased June, 1884	190,320.23
Stocks increased May, 1884	322,981.75
Stocks increased April, 1884	1,945,919.83
Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	386,004.51

	RECEIPTS.	DELIVERIES.
Daily average June, 1884	67,350	60,907
Daily Average May, 1884	66,688	56,448
Daily Average April, 1884	65,794	54,773
Daily Average March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52,737
Daily Average February	65,208	44,352
Daily Average January	65,125	43,813

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

PUBLISHED MONTHLY BY

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BRADFORD, PA.

W. C. ARMOR, MANAGER.

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THE average cost of an oil well in the Canadian field does not exceed $500. Contractors do the drilling, furnishing boiler, engine and rig, for from $220 to $275 per well, according to location.

THE article in the AGE of last month on the Russian petroleum fields, was written by Charles Marvin, late a special correspondent of the London Morning Post. He is an acknowledged English authority on all matters pertaining to Russia, its industrial and political development, and the author of several works on the Central Asian question. His last book on "The Petroleum Industry of Southern Russia," fully illustrated with maps and plates, is published in this country by John Wiley & Sons, New York. A larger work on politics and travel from his pen, entitled "The Region of the Eternal Fire," is about to issue from the press.

THE late panic has been instrumental in bringing about the uniform early closing of the exchanges. During the heat of the excitement, President C. L. Wheeler suggested that one continuous session of the exchanges be held, from 10 a. m. to 3 p. m. with no intermission during the noon hour. It met with the approval of a majority of the conference exchanges and was ordered to take effect, until the first of June. Upon trial the idea was found such a good one, that the practice has become general, and all of the exchanges now discontinue business when the hour of three p. m. arrives. The new arrangement also meets with favor on the part of the banks that loan money on certificates. The hour of closing the exchanges now corresponds with the closing hour of the banks, and there is no opportunity for wide fluctuations of value, after the banks are closed. Their collateral is thus protected until the beginning of the following day's business, when they have ample time to secure themselves by calling for additional margins, or selling the oil on the floor when the occasion demands.

THE PRODUCING REGION.

ALLEGANY FIELD.

On the first of June, 1882, there were 189 rigs up and building and 173 wells drilling in the Allegany field. On the last day of September of that year the count showed 69 rigs and 38 drilling wells. During May, 1882, 251 wells were completed, while the number in September had dwindled to 29. The great gushers which roared from the depths of Cherry Grove during this memorable season, sent the crude fractions flying down the scale until they reached the low point of 49⅜ cents. About forty thousand barrels of new production per day brought to the surface inside of ninety days, in the Cherry Grove section, forced the drill to a standstill in Allegany and all other sections outside the famous pool. Allegany, on account of the low price, and for the want of available territory, is fast nearing the basis reached during the year of 1882. The shut down movement inaugurated in May continued in June, and on the first of July only 18 new rigs were up and building within the confines of the Allegany field. There were 57 rigs which had been standing for thirty days or longer, and 40 wells drilling. Compared with the figures of June 1st there was a decrease of 28 in the new work.

There is some prospecting on the South Alma streak, and fair wells are being found in the 106 section. Considerable experimental work is being done along the western side of the pool, which is being developed in Wirt. The production is maintained in the neighborhood of 12,000, barrels, and the field presents few interesting features so far as new developments are concerned.

THE BRADFORD FIELD.

During June there were but twenty new rigs erected in the Bradford field, and the number of drilling wells was decreased twenty-six. The total new work under way at the close of the month shows a decline of forty-two from the figures of the preceding month. Of the seventy-six wells completed four came in dry. Cole Creek is the only section of the field that exhibits any degree of activity, and there the work is confined to the Union Oil Company and John McKeown. The field has maintained its production with great uniformity, and with the aid of a half dozen of the old time gushers characteristic of the palmy days of the Cole Creek front, has slightly increased its output over the April and May figures. The neglected nooks

and corners and outcropping spurs of the great Bradford field cannot be drilled with profit when the crude market vibrates for any length of time about the sixty cent point.

WARREN AND FOREST.

The eastern limits of the suburb of Warren, known as Glade City, are just now the busiest parts of the entire field. Here scenes of bustle and activity are presented that reflect faintly the times of Cherry Grove, and present a striking contrast to the brooding quiet that characterizes the slowly dying sections of Bradford and Allegany. The opening of the Wesley Chambers No. 1, on the Stewart lands, marked the existence of a belt of which no one dreamed, and the Gartlan strike, followed closely by the Shirley No. 2, the Weible, the Johnson, the Hayes and the Grace, demonstrated that it was of greater magnitude than was at first thought possible. The northeastern limit of the new pool is well defined, but the southwestern extension is still a matter of conjecture. The Hoffman well, on lot 461, at this writing, has not been opened up. It has been producing several months, and the opinion prevails that it obtains its oil from the same sand as the Wardwell wells, and that it is situated on a prolongation of the belt. A distance of 3½ miles separates this well from that of Chambers, at the northeastern extremity.

The Hayes well, on the J. L. McWilliams farm, is a mile and a quarter southwest of the Gartlan gusher. It was brought in about the first of the month, and started off at a thousand barrels. On the 11th it was doing 400 barrels a day. About half a mile south, and west of the Hayes, is the well of Capt. Grace, on the Nelson lot. It was drilled into the sand on the 11th inst., and made 800 barrels the first 24 hours. The vicinity of the Grace well is marked by a cluster of village lots and potato patches, each of which has been leased to eager oil searchers. Here 11 rigs and drilling wells can be counted upon an area less than 500 feet square. The McWilliams farm has also been cut up into small leases, and all about the Hayes well work is being pushed forward with the greatest rapidity. Two dozen wells are already under way about these two latest additions to the Wardwell streak, and before the first of the month two dozen more will be started. The greater part of the lands on the southwestern extension of the belt are under the control of the large companies interested in the shut down movement. The same parties likewise hold the territory north and west. That portion of the field in the vicinity of the Glade bridge will soon be thoroughly perforated, and in less than sixty days will have passed out of importance as a factor in the production of crude petroleum.

The 95 wells finished in Warren and Forest during June, had a production on the last day of the month of 2,567 barrels. Fourteen of these wells were unproductive. On the 1st of July there were 24 new rigs up and building, 39 old rigs and 56 wells drilling, a decline of 54 from the totals of the 1st of June. The effect of the shut down movement is most noticeable in the sections outside of Glade. The latter division includes the active developments of the Wardwell belt. Low priced oil seems to present few perils to the ambitious owners of the potato patch leases about the north end of the Glade bridge.

BALLTOWN.

The Balltown field has been prevented from entirely dropping out of the public notice by the success of a recent venture, that seems to promise the addition of a considerable section of new territory to the area as previously outlined. Emery, Agnew & Co.'s No. 1 well, located near the centre of the western line of warrant 3,195, and one-fourth of a mile southeast of a dry hole drilled by the Porcupine Oil Co. on 3,194, surprised the trade June 20 by starting off with an initial production the first hour of 33 barrels. Its first 24 hours output is placed at 700 barrels. Since the first of the month this company has finished two more wells, respectively 400 and 800 feet, south of No 1. No. 2 proved of much smaller capacity than No. 1 having made about 200 barrels the first 24 hours. From its location, No. 3 was expected to be lighter than either of the other two, but at the present time, July 12, it is reported of the same character as No. 1. The Porcupine Oil Co.'s No. 26, on 3,194 west, and ten rods south of the Emery No. 1, drilled into the sand on the 6th inst., started at 500 barrels. No. 27 was in the sand on the 12th inst., and showing equally as good. J. A. Gartlan has a rig up in the southeast corner of his lands on warrant 3,194, and Clark & Foster have started to drill in the southeast corner of their seventy-five acre purchase on the same warrant. May, Kelly & Grandin have two wells drilling south of the Tionesta, on warrant 5,236. There were 7 wells completed in the Balltown district during June, whose aggregate production on the last day of the month is estimated at 500 barrels.

COOPER.

On the first of the month there were but two

wells drilling on the Cooper tract, and at the present writing (July 12) there is but one. The vicinity about Henry's Mills, which through the spring months was one of the busiest sections in the oil region, has sunk into a restful quiet. Nineteen wells were completed in that region during June, of which number, 5 were dry. J. L. McKinney & Co.'s No. 5 on the south-eastern part of the Williamson tract was finished June 20, at a depth of 1887 feet. About 15 feet of the oil formation was found, and this consisted mainly of shell and slate. There was but two feet of fair oil sand which contained not the slightest trace of any oil, and only a small amount of gas. The McCalmont Oil Company drilled a duster on the Henry lands, south of the second sand producer on lot 440, making the sixth dry hole that has been drilled in the fruitless search for an outlet from this singular second sand well. The same company also found another dry hole on the Howe lands, where they expected gas. Horton, Crary & Co. have recently completed a brace of dusters on lots 396 and 370, in an attempt to discover a further prolongation of the Henry's Mills belt towards the north-east.

LOWER COUNTRY.

The most interesting point in the lower country at present, is a section of the banks of Thorn creek, near Baldridge. Why the stream is called Thorn creek we do not know, as there is no plentitude of the prickly bushes there, and the stream itself has not an aggressive appearance. But about half a mile from where the stream empties into the aboriginal Connoquennessing, just above above Baldridge village, is located the Johnson well, on the Henderson farm. This well was reported dry a month ago, but having a splendid sand, was shot and tubed. After being pumped for a week, a little oil showed in the enormous quantity of salt water, and at last accounts the prospects were favorable for a moderate producer. Half a mile further up the stream, near the southeastern corner of the Wallace tract, is the Armstrong well, sometimes quoted as Sample, Boyd & Co. This well struck sand on the evening of the 27th ult., and shut down to move the boiler, the flow of gas being pretty heavy. That night the gas ignited and the rig burned. The well began flowing at intervals the next day, and has continued to improve up to the present time. The rig has been rebuilt and the well will be opened at once. Estimates on it vary from a 75-barrel pumper to 300 or 400 barrels.

Northeast of Baldridge district, midway between the Wallace McCalmont pool and Butler borough, William Reed's No. 1, on the Creswell farm, struck a very heavy gas vein some days ago, in the "hundred-foot" or first sand. The well is a prime gaser, and Reed has refused an offer of $5,000 for it. It is at present shut down, and will likely not be drilled deeper. Mr. Reed is pushing work on his other tests in that vicinity, and in time will either have gas enough to illuminate Butler county, some oil, or a cordon of dry holes that will shut off any possible extension of the Baldridge belt in that direction.

In the St. Joe district two dry holes were developed in the fourth sand, on the old third sand belt, since the last issue of the AGE, which cut off the extension of the prolific fourth sand territory to the east. These wells are not included in the detailed operations for June, having only been drilled from the third sand, from wich rock they are still producing. The large production of Phillips Bros'. No 1, on the Muenster (nearly 90 barrels), leads to the view that the fourth sand may become highly productive to the westward, this well being the farthest development in that direction. The pioneer fourth sand producer is midway between the Muenster and the dusters on the third sand belt. It had about 50 feet of good sand, and attained a 35-barrel production. The failures on the third sand belt found but 20 feet of fourth sand, while the Muenster farm well found 70 feet of sand, showing a regular improvement, both in thickness of sand and productiveness, from east to west.

In the Emlenton district the drill continues fairly active. The wells are of light calibre, but the majority of the operators own the ground on which the wells are located, so they have no royalty to pay. They also get the benefit of the 20 cents pipeage, as they deliver their own oil on cars, the pipe line companies having nothing to do with the Emlenton wells. The production of these wells, aggregating several hundred barrels daily, does not appear in pipe line runs, and should be added as "dump oil" to production estimates.

THE WILD-CATS.

Warren and Forest counties still furnish the most inviting allurements for the sanguine wild-catter who is constantly tracing imaginary oil belts, and making the crucial tests of the truth or falsity of his theories. Since the first of the month Elk county added another to her list of dusters, by the completion of the Johnson & Gillmor well, on 3784. The well is located in Highland township and near the centre of the

eastern half of the warrant. Sand was struck at a depth of 2327 feet. The drill passed through 50 feet of an excellent grade of sand that proved barren of oil. It contained a goodly quantity of gas however, which became greater as the drill went deeper. The gas is strong enough to throw gravel from the hole, and sprays out water, like a fountain.

The Warren Gas Company completed a powerful gas well during June, on lot 274, of the town of Sheffield, in Warren County. The Goettel Bros. & Hughes' (formerly Arters') venture on lot 49, of warrant 3174, in Forest county, is pronounced a failure. Several tests are under way in Warren county. On lot 520 of Pleasant township, Adams & Story have a well shut down on top of the sand, which was drilled with the expectation of striking the south-west end of the Wardwell belt. The same parties have a well drilling to the north-east of this test on lot 502, and are starting a wild-cat well in Cherry Grove township, on lot 724. The Beecher & Co. well on lot 739, re-commenced drilling on the 11th inst, after being shut down for several days on account of broken jars. It is dry in the Balltown sand. There were three wells under way on the first of the month, in the vicinity of the old "Hoodoo" duster in Forest county.

THE Canadian oil producer is apparently in a better situation at the present time than the American. He is receiving 85 cents per barrel for his oil, and is offering very little for sale, at that price. A general shut down of the pumping wells is again being agitated, but its success is doubtful because of the financial condition of most of the producers. Refined is quoted at 11½ cents. The shipments of crude and refined and distillates, reduced to crude equivalent, during the month of June were 38,396 barrels.

ON Thursday, July 3, while Edward Mills, Joseph Ayers and Robert Stevens were drawing tubing at the Denman well, in the Macksburg field, the gas and oil caught fire from the boiler, and fatally burned Ayers and Mills. Stevens was very badly burned, but may recover. Ayers fell from the derrick, breaking an arm and a leg, and was burned to a crisp. Mills died the next day at 3 o'clock. He was a brother of Tom, Scott and Joe Mills, all well known in the oil country.

MAPS showing all the latest developments in the Glade or Wardwell section, sent to any address on receipt of 75 cents.

STRICTLY JOURNALISTIC.

On July 2d, Mr. Justus C. McMullen, one of the publishers of the AGE, was married, at the home of the bride's parents, in this city, to Miss Cora M., daughter of Colonel L. M. Morton, managing editor of the *Era*. The ceremony was performed by Rev. Edward Bryan, and the newly wedded couple immediately departed on a short trip to Montreal, by way of Lake Ontario and the thousand islands of the St. Lawrence.

THE MACKSBURG FIELD.

The Buckeye oil field furnished nothing of significance during June. The Union Oil Co.'s test on the Neptune farm, which is generally regarded as a failure, will check drilling to the northeast. Results at the Denman well seem to denote that it is unsafe to experiment any further in that direction. Several tests are under way toward the east, on the theory of an east and west belt line, and a couple of wells will be drilled by oil region parties in the Cow Run section. Since the first of the month the Syndicate well on the M. A. Schilling farm has been completed. It is located to the northwest of the Laing well about half a mile, and is an average producer.

WELLS COMPLETED.

Warren, John Denman	10
Neptune, Union Oil Co	dry
Atkinson, Decker & Son	10
James, St James Oil Co	10
Dutton, M B McManus	10
Smithson, Stevens & Co	10
Rice, George Rice	10
Wells	7
Production	60
Dry	1

WELLS DRILLING.

Schilling, Syndicate Oil Co	near sand
Coal lands, Laing & Co	500
Paton, Mills & Mullin	near sand
"Pod" Stevens, Mills & Mullin	near sand
Greenberry Stevens, Mills & Mullin	200
Armstrong, D W Clark & Co	250
Atkinson, do	1200
Warren, do (old)	rig
Perkins, C J Garvey	400
Crawford, Borckman & Co	150
do do do	250
James, St James Oil Co	drilling
DeLong, Macksburg Oil Co	drilling
Smithson, do	drilling
Rice, Geo Rice	drilling
Heddelson, The Union Oil Co	1100
Morris, do	300
Gilmore, Geo H Nesbit	150
Miller, F McDonald	rig
G Shilling, Mills & Austin	rig
Perkins, J C Lineman	rig bldg
Lovell Oil Co George Rice	rig
Marke, Willis Decker	rig
Lincome, Bradley & Lockwood	rig bldg
J Kathary, J Kathary	drilling
Atkinson, Decker & Son	rig
Rigs up and building	8
Wells drilling	18
Total	26

THE flame from the Westinghouse gas well reaches to the height of 80 feet. The gas escapes from 5⅝-inch casing seventy-five feet high, so that the top of the jet is 155 feet from the ground.

JUNE OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN JUNE, 1884.

Allegany Field.

Scio.

Lot. Owner.	Barrels.
2, Dean & Irvin	10
11, Thompson & Vesey No 3	10
12, Griffin & Co No 9 est	8
35, Duke & Norton Oil Co	dry
50, The Union Oil Co No 7	8
Wells	5
Production	36
Dry	1

Alma.

17, Scott	8
19, Rumsey & Lovell No 2	12
20, Wm Coast No 20	12
26, Last Chance Oil Co	4
38, Weiser Bros & Co No 23	8
80, Rathbone est	5
106, Howard, O'Conner & Shanley No 2	10
106, Thornton & Dobbins No 3	10
107, I W Shirley No 3	7
107, " No 4	10
107, " No 5	7
120, McCalmont Oil Co No 3	10
140, Duke, Willetts & Rauber	8
142, Dean & Smith No 4	8
142, Scott est	8
Wells	15
Production	127

Wirt.

33, Miner, Wellman & Fuller No 19	12
44, McMulken	dry
44, Allegany Gas Co	6
61, Lester & Co est	8
Wells	4
Production	26
Dry	1

Bolivar.

8, Empire Gas Co	8
8, Jordan Oil Co No 5	10
15, (Sawyer farm) Sawyer & Co No 11	10
15, " " No 12	8
16, (Orin Wetherby) Empire Gas Co	5
23, F C Streeter & Co No 1	12
23, do No 4	15
23, Irvin & Morgan No 2	8
24, H M Ernst No 6	10
24, J O Johnston No 7	10
24, do No 1	8
63, Northrup & Co No 16 est	8
Wells	12
Production	112

Clarksville.

9, P T Kennedy No 12	8
10, Whipple Bros No 8	8
10, " No 9	10
10, Angell Oil Co	8
10, do	8
10, Dalrymple Bros	10
10, C W Scofield No 8	12
17, Jumbo Oil Co	8
17 William Cranston	10
17, Hill Farm Oil Co	8
27, Love & Co	8
Smith farm, National Transit Co	gas
Wells	12
Production	98
Dry	1

Genesee.

15, McCalmont Oil Co No 20	8
23, Emery Oil Co No 14	8
23, " " No 15	8
24, White & Ensign No 16	6
24, (Coon farm) J W Davis & Co No 11	8
Wells	5
Production	38

Miscellaneous.

Shingle House, Allen, Princess & Co	5
Willing, lot 42, L H Best	dry
Wells	2
Production	5
Dry	1

Bradford Field.

East and West Branches.

Farm. Operator.	Barrels.
Hinchey, S W McMurray & Co No 2	6
Cockroft, Van Wormer	5
Whittaker, F W Davis No 1	5
Bingham, G H Van Vleck No 24	6
Bingham, lot 168, R J Straight No 10	10
Dent, Emery Oil Co No 24	15
King, Barnsdall Brothers No 4	3
" " No 5	6
" J J Carter No 7	6
Clark, Clark & Owens No 5	6
Reed, Bradford Oil Co No 11	8
Covert, W S Hodgman & Co	dry
Taylor, Atlas Oil Co No 11	10
do do No 12	10
Lovejoy, Willoughby & Thayer No 7	5
Paul, Bayne, Fuller & Melvin No 4	dry
Moody, Emery Oil Co No 102	5
O'Donnell, Kelly & Murty	6
Inglesby, P T & W C Kennedy No 2	6
Kissam, Joseph Stettheimer	6
Stinson, Asher Brown No 9	8

Quintuple.

174, D Atwater & Co	10
181, Booth Brothers	10
227, G W McCullagh No 3	10
238, Asher Brown	10
Wells	25
Production	172
Dry	2

Kendall Creek.

Moore, Anchor Oil Co No 15	10
" " " No 16	12
" Watson & Curtis, No 4	10
Dennis, Mason Dennis	5
Dodge, Dodge & Carter	6
Willets, Charles Young No 25	10
Bingham, Mina Oil Co No 8	6
Mack, Logan & Seekins	6
Wells	8
Production	65

Foster Brook.

E T Co, Boyne, Penny & Coleman No 10	8
do F L Blackmarr & Post No 17	10
do Enterprise Transit Co No 84	12
do do do No 85	10
Foster, C H Foster No 12	8
C B & H, Watson Oil Co No 32	10
do Smith & Wood No 6	12
do Coldren & Wolf No 14	10
do Juter & Yager	10
Tait, Thomas Tait No 17	10
Gillmor, George Sager	8
Wells	11
Production	108

Four Mile.

Van Campen, W M Brown	8
Widow Carrol, Thomas Kervin No 7	8
Moultrous, John Coast, No 11	8
Stevens, Wm Stevens No 5	8
do William Chambers No 5	8
do C B Whitehead No 3	10
Stewart, E M Johnson	10
Firkel, Franchot Brothers	10
Stevens, Coast & Curtis	8
Garr, Tuna Oil Co	8
Wells	10
Production	86

Indian Creek.

Barse, U O Co (G V Forman agt) No 35	10
Keating, Forest Oil Co No 46	12
Keating, J L McKinney & Co No 33	10
Barse, Moulton	10
Canfield Hollow, Leasure & Barton	dry
Hill, E H Sherman & Co	8
Winchell, White & Young	8
Wells	7
Production	58
Dry	1

Cole Creek.

Bingham, lot 366, Union Oil Co No 15	10
do lot 579, Union Oil Co (Forman agt) No 6	30
do lot 569, do do do No 5	50
do lot 569, do do do No 7	60
do lot 574, Hamlin & Rose	30
do lot 580, John McKeown No 5	40
do lot 580, do No 6	40
do lot 580, do No 7	40
Wells	8
Production	300

Kinzua.

Bingham, Union Oil Co No 55	25
do (C P & H pur) Emery Oil Co No 38	20
do do do No 39	15
do lot 136, Thos A & J M Tait No 6	15
do lot 136, do do No 7	15
Hagadorn, P Newell	6

Kinzua Village.

Warrant 2724, Corydon, Coquette Oil Co	dry
Wells	7
Production	96
Dry	1

Warren and Forest.

Glade and other Towns.

Tract. Owner.	Barrels.
Wardwell, Benedict & Robinson No 11	10
Cobham, Union Oil Co No 16	50
do do do No 17	60
Page, do do No 2	dry
Emery, Marsh, Weible & Co	400
Cobham Bruce & Galloway	20
Elliott, Hackett & Shirley	250
Foster, Wesley Chambers No 2	40
Stewart, do No 2	60
Clark, Anchor Oil Co No 2	dry
Elliott, E T Johnson & Co No 1	500
Chapman, Clark, Foster & Co	dry
Parker, Fred Hayes & Co	5
Lacey, Capt P Grace	dry
Irvine, Brown Brothers No 3	10
Irvine, T J Melvin No 3	10
Ott, Herzel & Ames	dry
Island, Jacob Truby	dry
O H & S, Wesley Chambers No 6	5
J Roy, James Roy No 21	10
do School house lot Pickett & Co No 1	6
do do do No 2	6
Verbeck, C W H Verbeck No 2	8
do do No 3	6
Rankin, C McWilliams No 4	6
Beatty, D Beatty	8
Highhouse, Becker & Johnson	dry
Wells	27
Production	1470
Dry	7

Clarendon.

36, Borchert & Conklin No 5	4
56, Branch & Co No 2	3
55, Union Oil Co No 19	8
466, Stoneham Oil Co No 2	3
466, D Riddlesperger No 1	dry
495, J Smith & Son No 5	4
463, Dean & Seifert No 1	6
464, Fred Hue & Co No 3	8
464, Columbia Oil Co No 11	8
464, do No 12	8
464, Waid & Dunham	3
464, M B McManus No 4	4
78, Kratzer No 2	5
79, Thayer & Crosby No 5	8
106, Shugart & George No 10	8
107, Fay & Lawton	6
108, Hackett & Shirley No 5	8
108, do No 7	6
495, W W Ballard No 3	6
494, Patterson & Solliday No 9	4
526, F G Keatley No 4	8
526, Adams & Story No 1	6
530, H B Porter No 10	8
557, Copeland & O'Donnell No 4	8
561, F H Rockwell & Co No 7	5
583, do do No 9	8
583, do do No 10	8
582, H G Lapham No 2	8
531, C A & D Cornen No 3	8
556, do No 9	5
591, A Kline & Co No 3	8
584, Markham & Co (Wm Pagett) No 2	5
Wells	32
Production	195
Dry	1

Tiona.

103, Fertig & Henne No 7	6
109, J S Patterson No 28	8
109, Schonblom & Townsend No 6	8
109, do do No 7	6
110, Fertig & Henne No 17	6
161, A & S Short No 4	3
161, Helm & Mealey	6
165, Wm Pagett No 16	6
204, E O Emerson	5
Wells	9
Production	54

Cooper District.

Henry lands, McCalmont Oil Co No 26	30
do do No 28	dry
Howe, do No 16	10
do do No 17	dry
439, do No 21	30
439, do No 24	15

396, Horton, Crary & Co No 8 . . . . . dry
396, do do No 9 3
J A Tract, Anchor Oil Co No 4 15
Cooper, do do No 35 10
407, Cochran Brothers No 8 20
407, Shank & Stewart No 3 15
438, Shank & Emery No 19 30
438, do No 20 30
438, do No 21 15
438, do No 24 25
Williamson, J L McKinney & Co No 5 . . dry
Clapp pur J M Clapp No 5 100
Warrant 3193 (Div B) L A Brenneman . . dry

Wells 19
Production 348
Dry 5

Balltown.

3194, Porcupine Oil Co No 20 15
3194, do do No 23 100
3194, do do No 24 20
4821, Balltown Oil Co No 23 15
4792, Howe Oil Co. No. 15 20
3195, Agnew, Emery & Co 300
5236, May, Kelly & Grandin No 26 30

Wells 7
Production 500

Miscellaneous.

274, Roystone, Warren Gas Co . . . . . gas

Wells 1
Production . . . . . –
Dry 1

Lower Country.

Venango.

Farm.	Operator.	Barrels.
Biery, Richardson & Williams		8
Hughes, Roess Bros		9
Fish, Warner & Co		2
Rockland, Gillinger & Co		dry
Rembold, Dale & Smullin No 13		25
do do do No 14		14
Sayers, Wolfe & Kugler		dry
Kaufmann, Dale Bros		5
Sands, J B Smithman		10
Munross, James Taylor		dry
Winkleman, Lee & Co		dry
McCalmont, McCalmont & Richardson		4
Gas City, Oil City Fuel Co		dry
Smoky City, Shugert & George		4
J McClintock, Seaberg		5
Kirkwood, Kirkwood		2

Vicinity Emlenton.

Weller, J Weller 5
McCullough, Porterfield & McCombs No 3 6
do do No 4 4
do Daniels & Crawford 10
do W Weaver 20
do Messer & Co 6
Richey, T Richey 5
Lawrence, Sands & Co 5
Rhodaberger, H Stevens & Co 8
Richey, McGrew & Crawford 6
D Crawford, Craig & Co 10
McCullough, B F Hamilton 2

Wells 28
Production 180
Dry 5

Clarion.

Graham, W Berlin 2
Whitehill, Hess & Co 3

Wells 2
Production 5
Dry . . . . . –

Butler and Armstrong.

Wallace, Fisher Bros No 4 35
do do No 5 100
do do No 6 30
McCalmont, Phillips Bros No 10 30
Henderson, Johnson Bros (testing) . . . . dry
Zang, Dennison & Hoyt No 3 60
Martin, Reed & Sutton 8
Wid McCray, Hunter & Cummings . . . 12
Turner, W J McKee 6
A B Storey, Hazlewood Oil Co 10
Kelley, Hooks & Co 5
Raymilton, Raymilton Oil Co 6

Wells 12
Production 296
Dry 1

DRILLING WELLS, RIGS UP AND BUILDING JULY 1.

Allegany Field.

Scio.

Lot.	Owner.	Depth.
2,	Waco Oil Co (old)	rig
2,	Coast Oil Co No 31 (old)	rig
2,	Pennell Bros No 4	rig
3,	Coyle & Co (old)	rig
4,	Mc Enroe Bros	rig
11,	Thompson & Vesey No 4 (old)	rig
11,	Lowcomer & Turner (old)	rig
12,	Allen & Morse (old)	rig
12,	Griffin & Co No 7 (old)	rig
12,	do No 10 (old)	rig
50,	The Union Oil Co No 8 (old)	rig
50,	do do No 9 (old)	rig
McAllister, Hostetter & Co No 3		drilling
L Morton farm, A J Applebee No 3 (old)		rig

New rigs 2
Old rigs 11
Drilling 1

Total 14

Alma.

1,	Phillips Bros No 14 (shut down)	300
1,	do No 15 (old)	rig
3,	M J McMullan & Co No 8	600
18,	H L McMullan No 10	150
19,	Rumsey & Lovell No 3	rig
23,	Vance & Horton (old)	3 rigs
24,	New Milford Oil Co (old)	2 rigs
24,	W F Jones (old)	rig
24,	Sutherland & Co No 5 (old)	rig
31,	J H Thornton	rig bldg
38,	Weiser Bros No 15 (old)	rig
38,	do No 12	600
38,	do No 13	700
45,	Nutting & Co	100
46,	Last Chance Oil Co	rig
51,	Sawyer & Co	drilling
63,	Leasure & Co	500
68,	O L Mather & Co	100
88,	Duke & Co (old)	rig
91,	Torrey & Jones	rig
105,	Hall & Co	700
106,	Howard, O'Connor &Shanley No 3 (old)	rig
110,	Shirley & Hostetter No 2	drilling
139,	Anderson & Co	900
142,	Willets & Duke	400
142,	H M Harkness No 3	800
142,	Dean & Smith No 5 (old)	rig

New rigs 4
Old rigs 12
Wells drilling 14

Total 30

Wirt.

14,	Lester & Co. (old)	rig
30,	John Moran (old)	rig
33,	Miner, Wellman & Fuller (old)	rig
43,	(Wilcox farm) Allegany Gas Co	drilling
52,	Coast Oil Co	sand
52,	Nicarauga Oil Co	300
61,	Muldoon Oil Co	rig
	Early Bros & McCoy	400
	do do	300
	Lattimer & Stearns	rig

New rigs 2
Old rigs 3
Wells drilling 5

Total 10

Bolivar.

5,	Star Oil Co No 3	500
6,	I Collins	300
7,	W & J Duke No 16 (old)	rig
7,	Coast Oil Co No 20 (old)	rig
7,	do No 42 (old)	rig
7,	do No 45 (old)	rig
7,	A A Hopkins No 16 (old)	rig
8,	(Ford) Empire Gas Co (old)	rig
15,	Fay	rig
15,	Kelly & McMurray No 3	drilling
15,	(Sawyer farm) Sawyer & Co No 12 (old)	rig
15,	(Woodard) do No 16	900
15,	(Sawyer farm) Boggs No 8 (shut down)	850
	John Benninger	350
	do	rig
	do	rig bldg
23,	F C Streeter & Co No 5	rig
23,	do do No 8	rig
23,	Irvin & Morgan No 3	rig
24,	J O Johnston No 2	rig
30,	Fritz & Lowry No 8 (old)	rig
30,	do do No 10 (old)	rig
31,	Smith & Co No 10 (old)	rig
42,	Parker & Co (old)	rig

New rigs 7
Old rigs 11
Drilling 6

Total 24

Clarksville.

9,	Heuston & Brecht No 4 (old)	rig
9,	F T Kennedy No 17	300
10,	Angell Oil Co	rig
10,	C W Scofield No 9	300
12,	Cuba Gas Co (old)	rig
	H C Werthman	rig
Carnahan, National Transit Co		rig

New rigs 3
Old rigs 2
Wells drilling 2

Total 7

Genesee.

8,	I Willets (old)	rig
8,	do (old)	rig
14,	C W Scofield No 9	100
14,	Merwin (old)	rig
21,	Empire Gas Co No 3 (old)	rig
22,	I Willets No 13 (old)	rig
22,	do No 14 (old)	rig
22,	do No 15 (old)	rig
22,	do (old)	rig
23,	Hughes & Coughlin (old)	rig
23,	Emery Oil Co No 16 (old)	rig
23,	do do No 17 (old)	rig
Champlain, Emery Oil Co No 8 (old)		rig
23,	C W Scofield No 6	700
29,	William Cranston (old)	rig
31,	Hugh L McMullan (old)	rig
38,	S E Young (old)	rig
38,	Empire Gas Co (old)	rig

New rigs . . . . . –
Old rigs 16
Drilling 2

Total 18

Miscellaneous.

Wellsville, Palmeter & Co (old)		rig
Towanda, C M Carroll & Co		500
Gains, Peck & Tait		rig

New rigs . . . . . –
Old rigs 2
Wells drilling 1

Total 3

Bradford Field.

East and West Branches.

Farm.	Operator.	Depth.
Paton, McClure & Co (old)		rig
Clark, McCray Bros (old)		rig
Willis, do No 29 (producing)		550
Hinchey, S W McMurray No 3		drilling
Hooker, Chapin & Chapman No 2		sand
Whittaker, F W Davis No 2		rig
Glass, Barnsdall Bros (old)		rig
Bingham, G H Van Vleck, No 31 (shut down)		sand
do lot 186, R J Straight No 3 (old)		rig
Dent, P C L & P Co No 64 (old)		rig
do do do No 65 (old)		rig
do Whitney & Wheeler No 40 (old)		rig
do do No 41		1500
Mill lot, Whitney & Wheeler No 9 (old)		rig
Clark, Clark & Owens No 6		100
Crooker, Jennings & Curtis No 10 (old)		rig
Lovejoy, Willoughby & Thayer No 5 (old)		rig
do do do No 8		1000
Taylor, Atlas Oil Co No 13		300
Paul, Bayne, Fuller & Melvin No 5 (old)		rig
Fox, Caldwell, Hamsher & Co No 9		sand
Wilson, West Branch Oil Co (old)		rig
Sugar Run, W H D Chapin (old)		rig
Inglesby, P T & W C Kennedy No 3		500
Cary, Duncan No 4 (old)		rig
Herrick, Springer & Co No 5		sand
Mack, Fisher Brothers (old)		rig

Quintuple.

25,	E Strong & Co No 2 (old)	rig
44,	J W Humphrey (old)	rig
139,	M J Seymour	800
174,	D Atwater & Co	rig
220,	Clark & Stearns (old)	rig

New rigs 2
Old rigs 18
Drilling 13

Total 33

Kendall Creek.

Moore, Anchor Oil Co	800
Moore, Watson & Curtis No 5 (old)	rig
Melvin, P C L & P Co No 85 (old)	rig
do do do No 86	rig
do dr do No 87	rig
Borden, Urquhart & Lavens (old)	rig
Norton, Dan Clark No 3 (old)	rig
do do do No 4 (old)	rig
Irons, Carter (old)	rig
Dodge, Dodge & Carter (old)	2 rigs
Bingham (lot 77) B F Brinton & Co	1000
Fisher, Larrabee & Wheedon	drilling
Mack, J A Logan & Seekins	rig

New rigs . . . 3
Old rigs . . . 8
Drilling . . . 3
Total . . . 14

Foster Brook.

E T Co, Boyne, Penny & Coleman No 11 (old)	rig
do F L Blackmarr & Post No 5(old)	rig
do R W Evans (old)	rig
C B & H, Watson Oil Co No 33 (old)	rig
do do do No 34 (old)	rig
do Josett Brothers No 6	300
do Juter & Yager (old)	rig

New rigs . . . –
Old rigs . . . 6
Well drilling . . . 1
Total . . . 7

Four Mile.

Van Campen Wm M Brown	1200
do do	2 rigs
do Geo Van Campen & Sons No 21 (old)	rig
do Geo Van Campen & Sons No 22 (old)	rig
do Cleveland Oil Co No 5 (old)	rig
do do do No 6 (old)	rig
do Wm Doe No 4 (old)	rig
do do No 5	rig
do Adams, Carson & Co(old)	2 rigs
do Merrill & Perrin (old)	rig
Waters, Griffin & Howard No 2 (old)	rig
Widow Carrol, Thomas Kervin No 8	300
do do No 9	rig
do Malloch & Griswold	rig
Stevens, Book & Rhodes	rig
do William Burns	1000
do J H Hughes	200
Stevens, Coast & Curtis	200
do do	rig
Firkel, Franchot Bros No 8	rig
Johnson, Hayes & Son	drilling

New rigs . . . 6
Old rigs . . . 11
Drilling . . . 6
Total . . . 23

Indian Creek.

Barse, U O Co (G V Forman agent) No 36	rig
North Branch, J D Downing & Co (old)	rig
do do do (old)	rig
Keating, Forest Oil Co No 47 (old)	rig
Hamlin, Miller & Odell No 4 (old)	rig
Dodge, Shear Bros No 8 (old)	rig
Zimmer, Shear Bros No 2 (old)	rig
do do No 3 (old)	rig
Keating, J L McKinney & Co No 34	100
Spiller, Spiller	800
Morse, Morse & Brown (old)	rig
Winchell, White & Young (old)	rig
Heissler, Dr W L Crissman	300
do do do	rig
Campbell, Golden & Co	drilling
Miles Loop, Union Oil Co No 25	rig

New rigs . . . 3
Old rigs . . . 9
Drilling . . . 4
Total . . . 16

Cole Creek.

Rew, Capt E Frawley (old)	rig
Bingham, lot 579 Union Oil Co (Forman agt) No 9	200
do lot 575 Union Oil Co (Forman agt) No 8	sand
do lot 536 Union Oil Co (Forman agt) (old)	rig
do lot 550 Union Oil Co (Forman agt) (old)	rig
do lot 574 Hamlin & Rose	500
do lot 574 do	rig
do lot 574 do	rig bldg
do lot 580 John McKeown No 8	1000
do lot 580 do No 9	1000
do lot 580 do No 10	1500
do lot 580 do No 11	300
do lot 580 do No 12	rig
do lot 580 do No 13	rig bldg

New rigs . . . 4
Old rigs . . . 3
Drilling . . . 7
Total . . . 14

Kinzua.

Bingham, Union Oil Co No 54	400
do do No 56	rig
do (C P & H pur) Emery Oil Co No 40 (old)	rig
do lot 129, P T & W C Kennedy No 5	1400
do lot 136 P T & W C Kennedy No 3	700

Kinzua Village.

Warrant 2590, H A Jameson	drilling
do 5556, Schoonmaker & Van Vleck	100
U O Co, Dr E A Van Scoy	drilling
Chattel, Unknown	rig

New rigs . . . 2
Old rigs . . . 1
Drilling . . . 6
Total . . . 9

Warren and Forest.

Glade and Other Towns.

Tract. Operator.	Depth.
Wardwell, Benedict & Robinson No 10	900
do do do No 12 (old)	rig
Cobham, Union Oil Co No 13 (old)	rig
do do do No 18 (shut down)	200
Foster, Wesley Chambers No 1 (old)	rig
Stewart, Wesley Chambers No 4	1000
Cobham, Lookout, do No 1	rig
Frost, do No 1	sand
do do No 2	rig bldg
J A Gartlan, Anchor Oil Co No 2 (shut down)	200
do do No 3 (old)	rig
Clark, do No 3 (old)	rig
do do No 4 (old)	rig
Elliott (Chambers' pur), Anchor Oil Co No 5	150
Galloway, do No 6	300
Storum, Pickett & Stone No 1	200
A McWilliams, do No 2	rig
do do No 3	200
J McWilliams, Hayes, Gartlan & Co	sand
Lacey, Bradley & McDonald No 2	350
Elliott, E T Johnson & Co No 2 (old)	rig
Kirwin, Clark & Foster (old)	rig
Frost, S S Fertig (old)	rig
Herman, Capt Grace	100
Irvine, T J Melvin No 4	rig
Schermerhorn, (foundry lot), Kerns & Smith	500
John Sweating, J A Magee (old)	rig
Magee, do	sand
Asylum, North Warren, Sanford & Jameson	drilling
Elk twp 5576, Calhoun&Co (shut down)	sand
Pleasant twp, (lot 520) Adams & Story (shut down)	sand
Glade Bridge, Thomas Kervin	rig
Roland, Calhoun & Co	rig
Island, Hayes & Co	rig

New rigs . . . 7
Old rigs . . . 14
Drilling . . . 13
Total . . . 34

Clarendon.

Lot. Operator.	Depth.
35, (Mooney farm) Bell No 2	rig
36, Borchert & Conklin No 6	drilling
54, D Beatty & Son No 36 (old)	rig
78. do do (old)	2 rigs
466, Stoneham Oil Co No 3 (old)	rig
466, D Riddlesperger (old)	rig
461, Otis Hoffman & Co (shut down)	sand
464, Logan & Cramer	500
464, Columbia Oil Co No 17 (old)	rig
464, M B McManus No 5	sand
465, W Benedict No 12 (old)	rig
465, Wm Pagett No 2 (old)	rig
106, Golden & Co	rig
107, Fay & Lawton No 14 (old)	rig
107, do do No 15 (old)	rig
108, Hackett & Shirley No 8	sand
108, C H Filkins (old)	rig
495, W W Ballard No 4 (old)	rig
494, Patterson & Solliday No 10	100
526, F G Keatley No 5	600
529, Beecher & Copeland	500
529, J C Goal No 3	100
528, Beckner	rig
530, H B Porter No 11	500
557, R E Townsend & Co	rig bldg
561, F H Rockwell & Co No 8	rig
583, do do do No 11	sand
582, H G Lapham No 3	sand
583, do do No 4	rig bldg
531, C A & D Cornen No 4	800
556, do do No 11	300
591, A Kline & Co No 4	200
591, do do No 5	rig bldg

New rigs . . . 7
Old rigs and shut down . . . 13
Drilling . . . 14
Total . . . 34

Tiona.

Lot. Operator.	Depth.
59, Fertig & Henne	drilling
75, do (shut down)	sand
104, Armor & Co No 1	200
109, J S Patterson No 29	sand
109, do do No 30	800
109, do do No 31	rig
109, Schonblom & Townsend No 8 (old)	rig
110, Fertig & Henne (old)	2 rigs
160, Conley, Pagett & Co No 7	700
161, Helm & Mealey (old)	rig
164, do	rig
164, Hill & Powell No 3	600
164, do do No 4	rig
165, C H Coffin & Co No 2 (old)	rig
204, A G Aiken & Co	sand

New rigs . . . 3
Old rigs . . . 5
Drilling . . . 8
Total . . . 16

Cooper District.

Tract. Operator.	Depth.
439, McCalmont Oil Co No 22	1400
396, Horton, Crary & Co No 10	900
Cooper, M W S & Co No 38	sand
do Clark & Foster No 7	800
Lot 407, Cochran Bros No 6	1500
do do No 7	rig
do do No 9	900
do Shank & Stewart No 4	sand
Lot 438, Shank & Emery No 14 (fishing)	sand
do do do No 22	750
do do do No 23 (old)	rig

New rigs . . . 1
Old rigs . . . 1
Drilling . . . 9
Total . . . 11

Balltown.

Lot. Operator.	Depth.
3194, Porcupine Oil Co No 21 (old)	rig
3194, do No 25	600
3194, do No 26	200
3194, do No 27	100
3194, do No 28	rig
4821, Balltown Oil Co No 24 (old)	rig
3195, Emery, Agnew & Co No 2	100
4792, Howe Oil Co No 16 (old)	rig
4792, do do No 17 (old)	rig
5236, May, Kelly & Grandin No 27	200
5236, do do No 28	rig bldg

New rigs . . . 2
Old rigs . . . 4
Drilling . . . 5
Total . . . 11

Miscellaneous.

Scott Run, C A Campbell	drilling
Warrant 3174, (lot 49 Forest) Goettel Bros & Hughes (shut down)	sand
do 3672, Forest Johnson & Murphy et al	sand
do 3752, do do	drilling
do 3561, Frost & Co	drilling
do 3561, W E Hess	rig
do 3646, Palmer & Butts (old)	rig
do 3571, Crabtree & Davis (old)	rig
Warrant 5224, Limestone twp, Hunter & McBride	900
do 5228, do T J Vandergrift	rig
do 5223, do do	rig
do 3668 Murphy	rig
Lot 739, Cherry Grove Beecher & Co	1700

New rigs . . . 4
Old rigs . . . 2
Drilling . . . 7
Total . . . 13

Lower Country

Venango.

Farm. Operator.	Depth.
Diamond, W H Loots (old)	rig
Tract 67, J B Smithman (old)	rig
Epley, Lee & Co	500
J Shiner, A P Dale	600
Mt. Hope, Galbraith & Co	500
Clintonville, Dean & Phillips	900

Vicinity Emlenton.

Black, Crawford & Black (fishing)	600
Smith, C Weible	sand
Graham, J J Nelson	800
Curry, Curry & Co	100
McCullough, do (shut down)	200
McCullough, Porterfield & McCombs	600
do do do	rig
do W Weaver	100
do Hornin, Klingler & Co	500
do Messer & Co	rig
Fox, J Martin (old)	rig
Richey, E Crawford & Sons (old)	rig
Leslie, Stevens & Co	rig
do Dutton & Co	800
L Sloan, Martin	150
Middleton, Wm Forster	100
B McGinniss, Harrington Bros	250
J McGinnis, J McGinnis	800
Goodrich, E Goodrich	rig

New Rigs	4
Old Rigs	4
Wells drilling	17
Total	25

Clarion.

Banner, Banner Oil Co	100
Lehigh, Lehigh Oil Co	700
Clarion, Clarion Gas Co	500
Fullerton, Edwards & Co	rig

New rigs	1
Old rigs	–
Wells drilling	3
Total	4

Butler and Armstrong.

Wallace, Fisher Bros No 8	600
do do do No 9 (old)	rig
McCalmont, Phillips Bros No 11	1400
do do do No 12	700
McCandless, do do	1600
Green or Dorsey do	1500
Hazlett, Campbell, Gibson & Co	1550
Renfrew, A Shidemantle	850
Hamel, Forest Oil Co	sand
Martin, S Armstrong	sand
Ribolds, J J Painter (old)	rig
S Shaffner, Wm Reed	1200
Criswell, do	250
F Cook, do	rig
Muenster, Phillips Bros No 2	350
do do do No 3	100
Wheat, do do	700
Mulligan, McGuire & Co No 3	sand
do do do No 4	250
do Pipe Liners	sand
Zang, Dennison & Hoyt	drilling
Kesselman, Reed & Sutton	400
Kameret, Hunter & Cummings	600
Reep, Westerman & Co	sand
Diler, W S Williams	rig
Bauers, P A Rattigan	1400
Barkeyville, B F Hamilton (shut down)	sand
Six Points, W C Vance	900
Robinson, (Byrom Center) Daugherty & Co	rig

New Rigs	3
Old Rigs	2
Wells drilling	24
Total	29

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to July 1st, 1884.

1882.	Ch'y Gr've.	Cooper.	Balltown.	Total.	Daily Av'ge
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
April	31,191	126,860	71,989	230,040	7,668
May	30,010	107,514	70,069	207,593	6,696
June	25,348	89,554	67,508	182,410	6,080
Total July 1, '84	3,270,330	1,791,609	1,244,413	6,306,352	7,963

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to July 1st, 1884. Cherry Grove has produced 3,270,330 barrels, Cooper 1,791,609 and Balltown 1,244,413 barrels. The daily average runs from the three fields during June were 6,080 barrels, a decrease of 616 barrels from the May figures. The daily average runs from the old Cooper section during June were 1,379 barrels, and of the Henry's Mill pool 1,606; making a total of 2,985 barrels. The daily average for May was 3,468 barrels, and for April 4,230 barrels. The Balltown field had an average of 2,250 in June, against 2,260 barrels in May.

The total pipe line runs from Wardwell and Glade were in June 61,260 barrels, in May 31,451, and in April 14,263 barrels. From the Baldridge section the June runs were 29,070 and the May 32,885 barrels.

THE Hoffman well, on lot 461, west of Stoneham, was opened up on the 14th inst. The well showed no signs of improvement, and it is now plain that the best part of the sand was struck before the plugs were inserted.

A NEW candidate for popularity has appeared among the Sunday morning papers of the oil region. It is the Jamestown *Sun*, and the proprietors, Messrs. Camp and Fuller, both young men, well known throughout the oil country, are deserving of all that the venture promises them.

THE Kerwin well, on the Sam Hook lot, west of Captain Grace's was drilled into the sand on the afternoon of the 14th, and started at thirty barrels the first hour. Tom took all the boards off the lower part of the derrick, and gave everybody an opportunity to see all they desired. About three hundred people assembled to witness the opening scene, and every available point of sight about the derrick and tank was occupied.

THE Anchor Oil Company control all the visible territory on the Wardwell belt, with the exception of about 250 acres. The owners of the remnant are not disposed to profit by the lessons of the Cherry Grove fiasco.

THE publishers of the AGE have for sale the few remaining copies of Opperman's oil region maps.

OUR R. R. time tables are corrected up to date.

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	MAY, 1884. Wells.	Prod'n.	Dry.	JUNE, 1884. Wells.	Prod'n.	Dry.
Scio	11	77	1	5	36	1
Alma	17	156	.	15	127	.
Wirt	7	65	1	4	26	1
Bolivar	27	244	.	12	112	.
Clarksville	9	75	1	12	98	1
Genesee	6	64	.	5	38	.
Miscellaneous	3	.	3	2	5	1
Total	80	681	5	55	442	4

BRADFORD FIELD.

Division of Field.	MAY. Wells.	Prod'n.	Dry.	JUNE, Wells.	Prod'n.	Dry.
E. & W. Branches	25	175	3	25	172	2
Kendall Creek	9	75	.	8	65	.
Foster Brook	16	156	.	11	108	.
Four Mile	17	166	.	10	86	.
Indian&Meeks Cr'ks	8	72	.	7	58	1
Cole Creek	10	253	.	8	300	.
Kinzua	6	39	1	7	96	1
Total	91	936	4	76	885	4

WARREN AND FOREST.

District	MAY. Wells.	Prod'n.	Dry.	JUNE. Wells.	Prod'n.	Dry.
Glade	27	634	8	27	1470	7
Clarendon	26	173	.	32	195	1
Tiona	16	94	.	9	54	.
Cooper	20	455	2	19	348	5
Balltown	7	176	.	7	500	.
Miscellaneous	2	.	2	1	.	1
Total	98	1532	12	95	2567	14

LOWER COUNTRY.

District	MAY. Wells.	Prod'n.	Dry.	JUNE. Wells.	Prod'n.	Dry.
Venango	31	208	5	28	180	5
Clarion	3	4	2	2	5	.
Butler and Armstrong	12	880	1	12	296	1
Total	46	1092	8	42	481	6

GRAND SUMMARY.

District.	MAY. Wells.	Prod'n.	Dry.	JUNE. Wells.	Prod'n.	Dry.
Allegany	80	681	5	55	442	4
Bradford	91	936	4	76	885	4
Warren and Forest	98	1532	12	95	2567	14
Lower Field	46	1092	8	42	481	6
May Total	315	4241	29	268	4375	28
June Total	268	4375	28			
Difference	47	134	1			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JULY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	5	10	5	20	2	11	1	14
Alma	8	12	18	38	4	12	14	30
Wirt	5	.	6	11	2	3	5	10
Bolivar	8	8	8	24	7	11	6	24
Clarksville	3	2	9	14	3	2	2	7
Genesee	5	15	3	23	.	16	2	18
Miscellaneous	1	1	2	4	.	2	1	3
Total	35	48	51	134	18	57	31	106

BRADFORD FIELD.

Division of Field.	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JULY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	17	13	20	50	2	18	13	33
Kendall Creek	3	7	6	16	3	8	3	14
Foster Brook	5	1	10	16	.	6	1	7
Four Mile	12	8	7	27	6	11	6	23
Indian Creek	5	8	6	19	3	9	4	16
Cole Creek	3	3	9	15	4	3	7	14
Kinzua	5	2	8	15	2	1	6	9
Miscellaneous	.	.	.	.	.	.	.	.
Total	50	42	66	158	20	56	40	116

WARREN AND FOREST.

Division of Field.	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JULY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	18	7	20	45	7	14	13	34
Clarendon	23	10	26	59	7	13	14	34
Tiona	10	1	9	20	3	5	8	16
Cooper	9	.	18	27	1	1	9	11
Balltown	6	1	4	11	2	4	5	11
Miscellaneous	4	2	5	11	4	2	7	13
Total	70	21	82	173	24	39	56	119

LOWER COUNTRY.

Division of Field.	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JULY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	6	3	29	38	4	4	17	25
Clarion	0	0	1	1	1	.	3	4
Butler & Armstrong	4	2	25	31	3	2	24	29
Total	10	5	55	70	8	6	44	58

GRAND SUMMARY.

Field.	JUNE 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	JULY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	35	48	51	134	18	57	31	106
Bradford	50	42	66	158	20	56	40	116
Warren & Forest	70	21	82	173	24	39	56	119
Lower Country	10	5	55	70	8	6	44	58
Total June 1	165	116	254	535	70	158	171	399
Total July 1	70	158	171	399				
Difference	95	42	83	136				

DECREASED STOCKS ABROAD.

The stocks in foreign ports are slowly increasing from month to month, but they are still very much behind the total figures of one year ago, as will be seen by the following comparative statement:

	Stocks June 21, '84.	Same time '83.
London	252,943	471,628
Trieste	51,515	33,875
Seven Continental ports	1,790,119	2,033,570
Total	2,094,577	2,539,073
Decrease		444,496

ANCIENT USE OF LAMPS AND CANDLES.

Lamps were known in all the ancient countries where civilization had dawned. In China, India, Egypt and Etruria they have been so long used that the memory of man runneth not to the contrary. Comparatively modern Greece and Rome gathered them from the nations whence they derived their civilization and their mechanical arts. Some nations have been fortunate in the possession of bitumen or mineral pitch, and have used it for lighting purposes from time immemorial. This has been the case especially with the Asiatic nations in the vicinity of the Caspian Sea. Splinters of wood, saturated in rock oil, olive oil or animal grease, and frayed pieces of soft bark, or twisted locks of vegetable fibre dipped in melted pitch or grease were the first forms of the candle. The Romans used candles of wax or tallow with wicks of rush before the invention of lamps. Alfred the Great used a graduated wax candle as a time-keeper, and placed it in a lantern to equalize its consumption and prevent flaring. Splinters of wood saturated with animal fat were used in England 1300 A. D.

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, MAY, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., JULY 3, 1884.

CUSTOMS DISTRICTS.	MINERAL CRUDE.		NAPHTHAS.		ILLUMINATING.		LUBRICATING AND PARAFFINE OIL.		RESIDUUM.		TOTAL.	
	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.
Boston & Charlestown, Mass.	.....	....	500	200	525,180	58,054	22,270	5,470	.....	....	547,950	63,724
New York, N. Y.	4,754,742	404,499	468,771	38,607	25,828,736	2,438,883	665,486	127,493	179,130	14,475	31,896,865	3,023,957
Philadelphia, Pa.	1,025,761	75,119	22,688	1,872	8,428,292	736,173	56,200	11,225	.....	....	9,532,941	824,389
Baltimore. Md.	.....	....	.....	....	1,715,809	114,912	10,209	1,600	.....	....	1,726,018	146,512
San Francisco, Cal.	.....	....	2,000	570	16,490	2,870	1,725	1,083	.....	....	20,215	4,523
All other districts.	.....	....	802	101	56,510	8,275	3,559	1,232	210	48	61,081	9,656
Total for May 1884	5,780,503	479,618	494,761	41,350	36,571,017	3,389,167	759,449	148,103	179,340	14,523	43,785,070	4,072,761
Total for May 1883	6,216,283	449,297	1,409,136	93,604	51,519,203	4,578,096	1,054,049	223,359	868,728	67,772	61,067,399	5,412,128
Total for 11 months, ended May 31, 1884	61,160,970	4,844,792	13,501,997	939,679	371,753,744	34,250,235	9,722,962	2,003,787	4,619,832	306,512	460,759,505	43,345,005
Total for 11 months, ended May 31, 1883	47,986,886	3,559,001	15,795,420	1,195,845	379,355,721	33,312,960	9,352,020	2,144,893	5,518,506	395,294	458,008,553	40,607,993

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	June 21, 1884. Barrels.	May. 24, 1884. Barrels.
London	252,943	262,346
Trieste	51,515	44,817
Seven Continental Ports	1,790,119	1,605,470
Total Stocks afloat and ashore	2,094,577	1,912,633
Increase in Stocks since May 24		181,944

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS JUNE 21, 1884.

	Stocks W'k end'g June 21.		Stocks Afloat W'k end'g June 21.		Unloading W'k end'g June 21.		Grand Total Stocks Afloat & Unloading.		Receipts. Jan. 1 to June 21.		Shipments Jan. 1 to June 21.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	380,095	236,473	63,533	16,470	28,000	. . .	471,628	252,943	379,640	151,827	242,583	275,444
Trieste	19,397	41,515	11,568	. . .	3,000	10,000	33,875	51,515	37,489	109,370	86,046	77,338
Bremen	882,344	804,980	62,570	106,061	52,500	56,000	997,414	967,041	529,273	369,440	403,070	389,712
Hamburg	332,907	185,984	77,897	82,533	34,100	56,000	444,904	324,517	434,708	444,359	300,522	375,941
Antwerp	213,516	126,930	48,569	74,596	41,000	31,500	303,085	233,026	304,386	300,799	277,722	382,144
Rotterdam	76,438	65,638	10,996	6,692	5,000	5,500	92,434	77,830	88,140	109,656	86,883	94,580
Amsterdam	39,629	45,714	29,905	7,722	16,000	16,000	85,534	69,436	78,076	136,254	87,858	115,903
Stettin	64,634	46,960	16,206	29,090	13,700	23,200	94,540	99,250	79,457	66,588	47,954	79,465
Danzig	11,502	5,996	4,157	13,023	. . .	. . .	15,659	19,019	21,979	17,445	33,815	27,496
Total	1,620,970	1,282,202	250,300	319,717	162,300	188,200	2,033,570	1,790,119	1,536,019	1,444,541	1,237,824	1,465,241

	1881.	1882.	1883.	1884.
Total stocks exclusive Danzig, London and Trieste	768,776	1,238,360	1,620,970	1,282,202
Total afloat, exclusive Danzig, London and Trieste	239,366	230,537	250,300	319,717
Total unloading, exclusive Danzig, London and Trieste	240,000	234,200	162,300	188,200
Grand Total exclusive Danzig, London and Trieste	1,248,142	1,703,097	2,033,570	1,790,119
Total Shipments exclusive Danzig, London and Trieste	20,560	35,012	30,119	33,120
Total Shipments since January 1, exclusive Danzig, London and Trieste	1,273,722	1,144,052	1,237,824	1,465,241

CRUDE QUOTATIONS FOR JUNE, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Bradford. Highest.	Bradford. Lowest.	Bradford. Closed.	Oil City. Opened.	Oil City. Highest.	Oil City. Lowest.	Oil City. Closed.	New York. Opened.	New York. Highest.	New York. Lowest.	New York. Closed.	Pittsburgh. Opened.	Pittsburgh. Highest.	Pittsburgh. Lowest.	Pittsburgh. Closed.
M	2	76½	78⅛	75½	77¾	76½	78⅛	75½	77¾	76¼	78	75⅝	77¾	76	78	75½	77¾
T	3	77½	79	76¾	76¾	77½	79⅜	76¾	76¾	77⅞	79	76⅞	76⅝	77¼	78⅞	76¾	76¾
W	4	76½	77	75¾	75¾	76¾	77	75¾	75⅞	76½	77	75¾	76	76½	76⅞	75¾	75⅞
T	5	75¾	76¼	74¼	75	75¾	76½	74⅜	74⅞	75½	76½	74⅛	75	75¾	76⅛	74¼	74⅞
F	6	75	76	74⅞	75	75	76⅛	75	75⅛	75	76¼	75	75⅛	74⅞	76	74⅞	75⅛
S	7	75	75⅝	73⅞	73⅞	75¼	75⅝	74	74	74⅞	75¾	73⅞	73⅞	75⅜	75⅝	74	74
M	9	74	74½	73⅝	73⅞	74¼	74⅝	73¾	74	73½	74½	73½	74	73⅞	74¼	73⅝	74
T	10	74	74⅝	73⅝	73⅝	73⅞	74¾	73¾	73¾	74¼	74⅝	73¾	73⅞	74	74⅝	73⅝	73⅝
W	11	73⅝	73⅞	70	70¼	73¾	73¾	70	70¼	73¾	73¾	70	70⅜	73¾	74	70	70
T	12	70½	71⅞	69	71¾	69½	72	69⅛	71⅞	70	72	69	72	70	72	69	71¾
F	13	72¼	73	70¾	71⅜	72	72⅝	70½	72⅜	72¼	73	70¾	71¼	72	72⅝	70¾	71⅜
S	14	71¼	72⅞	71⅛	72⅜	72	73	71½	72⅜	71	72⅞	70½	72⅜	72	72⅞	71½	72½
M	16	72½	73⅜	71½	71½	72⅜	73⅜	71½	71½	72⅞	73½	71½	71½	72½	73½	71½	71½
T	17	71⅝	71¾	70⅞	71⅛	71½	71¾	70⅞	71⅛	71½	71¾	70¾	71¼	71⅝	71¾	70¾	71⅛
W	18	71½	71½	70½	70½	71¼	71½	70⅜	70⅜	71¼	71⅜	70½	70½	71¼	71½	70½	70½
T	19	70⅜	70⅜	66	66⅞	70½	70½	65⅞	65⅞	70¼	70¼	66⅛	66⅞	70⅛	70⅛	66	66⅞
F	20	66¾	66¾	58⅞	58⅞	66½	66⅝	58⅝	58⅝	66⅝	66⅝	59	59	66¼	66¼	58⅛	58½
S	21	58	58	51	55⅜	57	58¾	51⅛	55	57	59	51⅜	55	57	58	50½	54⅞
M	23	55	59⅞	54⅜	59¾	56½	60	54½	59⅞	56½	60¼	54¾	59¾	56½	58¾	53⅛	58½
T	24	60	64	56⅝	63⅜	59½	64⅜	56⅝	64⅛	60½	64¼	56½	64¼	59½	64	56⅝	64
W	25	63½	66	60¼	60½	63¼	66⅛	60	60	64½	66	60⅛	60⅛	64½	66⅛	60¼	60¼
T	26	60½	63	59⅜	62⅜	59½	62⅞	59¼	62½	60	63¼	59	62⅛	60	62¾	59¼	62½
F	27	62½	63¼	61	61⅜	62½	63¼	61	61⅜	62½	63⅛	61	61⅝	62	63¼	61¼	61½
S	28	61¼	63	61	62⅝	61½	63	61	62½	61¼	63	61	62⅝	61½	62¾	61⅛	62½
M	30	62⅞	63¾	59⅝	60	62¾	63¾	59¾	60⅛	63⅛	63⅝	59¾	60⅛	63	63¾	59¾	60⅛

JUNE PRODUCTION REPORT.

Reports were received showing the amount of stocks at 6,913 Bradford wells June 1st, and 6,936 wells July 1st. The average stocks per well June 1st were 61.2 barrels, and on July 1st the same wells (with the addition of 23 new wells completed during June) gave an average of 56.8. The figures compared show an average reduction of stocks of 4.4 barrels per well. These results are set forth in the following:

Time.	No. Wells.	Gross Stocks.	Average per Well.
June 1, 1884	6,913	422,782	61.2
July 1, 1884	6,936	394,123	56.8
Difference	23	28,659	4.4

The number of wells in the Bradford field connected with the pipe lines July 1st is estimated at 13,285. Allowing that the wells reported afford a fair average for the entire field, the total stocks at wells were decreased during June by 58,454 barrels, a daily average of 1,948 barrels. The daily average pipe line runs from all wells in the Bradford field during June, by the National Transit and the Tidewater lines, were 35,701 barrels. Subtracting the decrease in stocks, a fair estimate on Bradford's production, per diem, during June, would be:

	Barrels.
Average Daily Pipe Line Runs	35,701
Average Daily Decrease of Stocks at Wells	1,948
Bradford's June production, est	33,753
do May do do	33,922
do April do do	32,442
do March do do	31,912
do February do do	32,378
do January do do 1884	31,806
do December do do	34,470
do Novemb'r do do	35,026
do October do do	35,654
do Septemb'r do do	34,966
do August do do	35,085
do July do do	34,537
do June do do 1883	35,270

These results show that the Bradford production remained at nearly the same figures during May and June.

THE ALLEGANY FIELD.

Reports of stocks at wells in the Allegany field are tabulated as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
June 1, 1884	1,085	50,921	46.9
July 1, 1884	1,092	45,500	41.7
Difference	7	5,421	5.2

The 1,085 wells from which reports were received, show a decrease of 5.2 barrels per well. The average stocks of the Allegany field were reduced to a lower ebb during June than at any time in the history of the field. The number of producing wells in the Allegany field June 1st is estimated at 3,663, and 3,714 July 1st.

From the preceding data the following statement is made:

Time.	No. Wells.	Average per Well.	Gross Stocks.
June 1, 1884	3,663	46.9	171,794
July 1, 1884	3,714	41.7	154,873
Difference	51	5.2	16,921

At this rate the total stocks at wells in the Allegany field decreased 16,921 barrels during June, a daily average decrease of 564 barrels. The average daily pipe line runs for the Allegany field in June were 11,672 barrels. Subtracting the decrease in stocks makes Allegany's estimated daily production for June 11,108 barrels.

	Barrels.
Allegany's June production is estimated at	11,108
Allegany's May production is estimated at	11,547
Allegany's April production is estimated at	11,848
Allegany's March production is estimated at	11,768
Allegany's February production is estimated at	11,607
Allegany's January production is estimated at	11,263
Allegany's December production is estimated at	12,437
Allegany's November production is estimated at	12,678
Allegany's October production is estimated at	13,089
Allegany's September production is estimated at	12,335
Allegany's August production is estimated at	12,264
Allegany's July production is estimated at	12,345

WARREN, FOREST AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Warren, Forest and the Lower Country. The number of wells on the first of each month, with their averages, are contained in the following statement:

Field.	No. Wells. June 1.	No. Wells. July 1.	Average per Well. June 1.	Average per Well July 1.
Clarendon & Tiona	129	132	51	52
Cherry Grove	58	58	95	80
Cooper District	142	147	151	115
Lower Country	81	82	59	60

The Cooper and Henry's Mills section decreased its stocks 36 barrels to the well, while the runs, as shown in the table under "White Sand Pools," were 483 barrels per diem less than during the month preceding. The Balltown runs averaged nearly the same during May and June, while at Wardwell there was an increase in the runs of 993 barrels a day.

Accepting the outside runs as representing the production, an estimate on the yield of the field for May and June would be as follows:

Field.	May. Barrels.	June. Barrels.
Allegany	11,547	11,108
Bradford	33,922	33,753
Outside runs	19,549	19,977
Total	65,018	64,838

These estimates denote a decrease of 180 barrels a day from the production of the preceding month.

At Clarendon, Pa., on the afternoon of July 3d, Patrick Connelly was immediately killed by the explosion of a small can of nitro glycerine while filling a shell with rackarock, preparatory to setting out to shoot a well.

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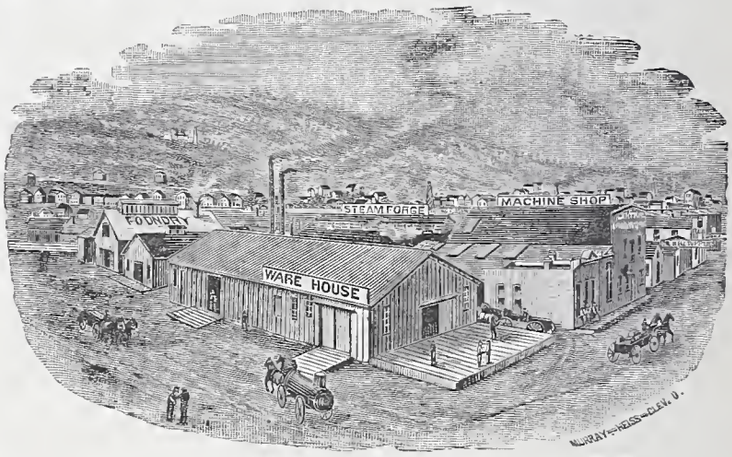

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THE PETROLEUM AGE.

Vol. III. BRADFORD, PA., AUGUST, 1884. No. 7.

THE PITTSBURGH BULL SYNDICATE OF 1883.

BY A. R. CRUM.

The "merry month of May" this year was one brimful of incidents, that in speculative circles were not of a merry nature at all. In stocks, grain, oil, speculators were going to the wall with enormous liabilities and very small assets. Of course, the gentry who had sold that which they did not possess, in many instances raked in good profits, and perhaps a few others were benefitted. It was during these troublous times, and amid the "wreck of matter and crush of worlds" speculative, that the announcement was flashed over the wires that the Penn Bank, of Pittsburgh, had closed its doors on account of its inability to see its depositors, without even a hint at going them any better. The announcement was heard by some in the petroleum trade with fears and trembling, and by others with a sigh of relief. As they sighed they murmured inwardly, with a soft and primitive thought almost poetic: "The Penn Syndicate is busted now; the schemers are at rest;" and naturally they felt relieved. The effect on the oil market was rather neutral, and when, two days later, it was announced that the Penn Bank had resumed, there was no reaction against the Hoffman well, which had tapped the sand and proved a disturbing element the day before. "Billy" Riddle had resolved that the bank, like Banquo's ghost, would not down, and he came himself, almost a banker's ghost, from a bed of sickness, and ordered the bank doors opened.

The familiar figure behind the screen almost restored confidence in the shattered institution, and some depositors were even led to increase their deposits, for the iron will and dauntless courage which led the shrewd financier to crawl from his pallet and "face the music," as he expressed it, were well known to Pittsburgh business men and highly respected. Ichabod! It was written over the door of the place, and it had long before been written on the pages of the ledger. The glory had departed forever, and on the 26th the doors were closed again, perhaps to prevent the escape of the safe and office furniture. Riddle was completely prostrated, and was borne to a hospital suffering from an overdose of chloral. Ugly rumors floated on the air, insinuations that suicide had been attempted, and respected citizens were viewed through the gnarly spectacles of suspicion. Images otherwise fair, were contorted and misshapen, as a landscape viewed through a defective window pane. What had been supposed to be a mighty bulwark of financial strength, was a mere mass of rotten garbage, and those who beheld knew not where to look for the next disclosure. Other banks were run on, but they braved the storm and met their checks without flinching.

Not until the examination into the affairs of the defunct corporation was begun did the real rottenness appear. Perhaps the half never will be told, but enough is known now to go into history as one of the most outrageous and gigantic embezzlements on record. Accounts overdrawn, false accounts created for thousands of dollars, depositors robbed of every cent, the bank vaults emptied of almost everything of value—such in brief are the disclosures made by the examination into the bank's affairs. Numerous arrests have been made, and each defendant when arrested has made a statement in personal defense, principally valuable for the damaging statements made concerning others implicated. Each one, to clear his own skirts of the filth, has plastered it thicker on his fellows. When the numerous suits which have been instituted come to trial, there will doubtless be many disclosures made of a nature to shock Pittsburgh business circles, and perhaps some outside of the Smoky City. Just who is most to blame, or what proportion of the odium shall be meted out to the various parties concerned, can only be told after the evidence is all in, but even at this stage of the game, it is morally certain that the shame does not all belong on the shoulders of W. N. Riddle. That he made an egregious and unpardonable mistake in attempting to recover speculative losses by further speculation is evident, but it is almost equally certain that others encouraged him to jump in the mire to wash the mud off, and after he was in stood on him to keep out of the dirt themselves.

The mass of literature brought out by the

suspension and subsequent legal actions, is very interesting to the petroleum public, for in it, here and there, are glimpses of the true inwardness of the great syndicate operations of last year—parts and parcels of the most gigantic scheme ever concocted in the oil market, second only to the careful plans and sure conclusions of the mighty Standard monopoly. It was early in May, 1883, but little more than a year before the explosion of the bomb, that whispers were heard in the oil exchanges of a syndicate which had been formed for the purpose of creating a "corner in oil," and later the scheme was enlarged to take in the object of transferring the control of the market from the hands of the Standard to its own. These rumors were laughed at by some and believed by others. Owing to correspondence that had passed between an Oil City broker and the great pork packer and provisions cornerer, Phil. Armour, it was at first supposed that the syndicate was of Chicago origin and headed by the dressed beef king. Later the rumors became more definite, and it was learned that "Billy" Riddle, of the Penn Bank, was mouth-piece of the syndicate, and as he had been prominent in engineering Russell Sage's petroleum pool in October, November and December, 1882, which drew three and a half millions of dollars from that excited market, Sage was for a time credited with heading the new movement. Certificates became notoriously scarce, and while the majority located them in Standard vaults, yet it was soon known that Jim Keene had been dipping into crude quite heavily. The gossip of the exchanges came to be all syndicate—the "woods were full of them," and they abode in every speculative city in the country. Even San Francisco furnished one in the persons of the three bonanza kings who control the oil fields of the Pacific slope, as they were reported in the field tooth and nail against the refining monopoly.

Under the stimulus of these rumors and a generally bullish state of affairs, the market crept up from 90 cents to the dollar point. There the Standard declared war, and its recognized agents became heavy sellers, but their efforts availed not for a time. Old traders, accustomed to bow to the will of the powers that be, predicted the demolition of the syndicate, sold their oil and began to put out short lines. A few wary speculators learned the secrets of the pool and dipped in heavy for a turn. The battles raged day after day, sometimes advancing, sometimes retreating, until at last the shorts rushed to cover, and the advance was ten cents in a single day. Here the wary few who had definite knowledge of the syndicate, unloaded their oil at enormous profit, and the next day, after a feverish spurt, the decline began. By this time it was well known that the syndicate was a "blind pool" and Riddle was spokesman. Perhaps a dozen prominent brokers in each of the exchanges had at various times acted for the pool, so that something of it had to be known, but the persons composing the pool were still unknown, and rumors on that score were numerous and contradictory. It was pretty definitely stated that the Standard's power was aimed at, and while the big monopoly's enemies were hopeful that something would come of it, the majority of oil region traders laid their money lightly on the success of the refining power. Still, the battles which raged in the exchanges when Standard sellers slugged the syndicate's buying brokers with big blocks, early in the game, were watched with an intense interest, and later, when the monopoly's agents retired from the fray, their re-entrance was watched for with the same fascinating interest. Warren and Oil City parties went to Pittsburgh and were let into the syndicate's secrets, and also into the "blind pool," and it was announced that the revised combination was prepared to buy several millions barrels more oil than was at first intended. At about the same time it was rumored that Mr Thompson, of the Pennsylvania railroad, was the real head of the pool, and was pulling the wires by way of Riddle. This gave rise to the supposition that the Standard really backed the pool, and had openly opposed it to mislead the public. This position led to the covering of many shorts, who were not desirous of opposing any such forces.

Of course, reminiscences of the old Pittsburgh "bull ring" floated up from 'way back in the "sixties," and it was told how that well planned "corner" was knocked out of time in numerous rounds, by snow, ice, flood and other incidentals of the weather and productiveness of the wells, all matters completely beyond the brainy gentlemen in the combination. As the numerous suits resulting from that campaign are matters of record in the Pittsburgh courts, they may be revived when the Penn Bank litigation is once in bloom. Stories were told, too, of Uncle Rufus Hatch's "corner in oil" of October and November, 1877, when Dan Goettel, acting as master of ceremonies, was reputed to have bought up more certificates than should have been extant, and old stagers reveled in remembrances of the

irresistible operations of the young man. Meantime prices were gradually seeking lower levels, and the syndicate managers were attracted by mention of Goettel's powers, and at once secured him to act for them. The scenes that followed surpassed anything ever seen in the oil exchange, as the Goettels, with unlimited orders, mopped up everything offered on the Oil City floor, while syndicate sellers with almost equally heavy orders, unloaded huge blocks. A transaction of less than 50,000 barrels came to be looked on with contempt, but in spite of all, prices slumped off in a way that made it very certain the syndicate could not get out even, and to make matters worse the strike of the telegraph operators was threatened. So much was this event feared that the market was heavily oversold, and when the telegraphers actually quitted their desks there was a violent reaction, which carried the market back over the dollar line, and almost eight cents higher, with the Standard men prominent buyers. It was believed that the Pittsburgh pool had disgorged its entire holdings, and the market assumed a healthy tone again.

When the little bull movement of September was inaugurated, it was learned that the syndicate still lived, for it made a violent kick on an advancing market in the shape of a sale of 1,500,000 barrels by F. B. Finsthwaite. Later the old spirit manifested itself in the person of Thomas Jefferson Watson, one of the former close allies of the pool, and relieved from the pressure of the fifteen cents a barrel a year storage on its load assumed in May and June, Mr. Watson disported himself in alternately putting the pool long and short, as circumstances directed, and became an element of distressing and dangerous power and influence in the trade. Alas! that such things be, but the Penn Bank, its syndicate, Mr. Watson, and the other Pittsburgh brokers prominent in the deal, are now but shadowy memories of former greatness. "Laid down," is inscribed in dull, dark characters over their financial tombs, with the motto, "It might have been different." The supposition that Mr. Thompson, his Pennsylvania Company and the Standard were interested in the syndicate, fades into the misty realms of mistaken fancy in the face of the evidence that the syndicate's loan of $2,000,000 negotiated in New York by a mutual friend of "Billy" Riddle and J. A. Bostwick, was secured from the latter gentleman unknown to the former, and was called in at a time when the syndicate could least afford to lose it. The story of the great "collapse" contains obvious morals which at this time need not be pointed out; and there are unwritten, interesting details connected with the deal which would fill a volume, but the leading features are enough for practical purposes. The machine has collapsed, and the Pittsburgh courts will soon be hard at work clearing up the wreck.

PETROLEUM IN IRON MAKING.

BY AMANDA T. JONES.

An article entitled "The Value of Petroleum as a Fuel for Metallurgical Purposes," by H. M. Howe, M. E., of Boston, Mass., should not be allowed to pass unchallenged. "Attempts to substitute petroleum for coal," the writer declares at the very outset, are "inevitably destined to fail." Such an assertion should be followed by incontrovertible argument. Let us see whether it is fully sustained by what follows. "The actual calorific power," says Mr. Howe, "has been determined by a most eminent, competent and wholly disinterested authority, and there is no need of looking to the statements of interested persons, or of conducting enormously costly experiments to see how it compares with that of coal, since the matter is one of record."

Who is this scientific Eminence, this infallible papal authority, who has once and for all time answered so difficult a question? Happily we are not left in ignorance. "At the request of the Emperor Napoleon the Third," (whist! think of that, now!) "the illustrious Henri St. Clair Deville investigated elaborately the calorific power of petroleum and gave the world his results." Our informant adds: "The results of such tests are entitled to the same kind of confidence as are those of the chemical analysis of a trustworthy chemist."

Are they? Let us see about that. A practical chemist, after analyzing a fragment of coal or a measure of crude petroleum, will be able to state what are the component parts of each, with their exact weights, and the number of heat-units that may be produced from them. He it is who gives us the latent calorific values or powers of the two fuels. What their respective efficiencies will be, in combustion, he cannot declare.

A scientific experimenter (like Mr. Deville), after careful tests may give us his report of the highest efficiency of either fuel which he has been able to obtain. In accepting his results all the conditions under which they were reached must be taken into account. For example: The

form of furnace used, the peculiarities of its ventilation and draught, atmospheric temperatures and disturbances—with any other accident or influence which may have tended to cause variations in rapidity of combustion, or to hinder proper application of generated heat. I therefore resolutely deny that the "illustrious" subject of the nephew of "my uncle" ever did what Mr. Howe asserts. What he really did was to take two locomotive boilers built for the Paris and Strasbourg Railway (and practically adapted to the consumption of solid not liquid fuel), fire them up thoroughly with coal first, afterward turn in his oil and steam—thus creating what the original inventor (patent of 1863) called a "fumous body"—and so proceed to take observations. No matter how carefully he conducted his experiments, how accurately he weighed coal and water, how closely he watched his steam gauge and timed the revolutions of his engine wheel, his results showed neither the "actual calorific power of petroleum" nor its highest possible efficiency. His furnace arrangements were wrong, his method of using liquid fuel was wrong, and his records were anything but conclusive.

Does not the actual efficiency of any fuel in process of combustion depend very largely upon the construction and peculiarities of the furnace which it feeds? Let Mr. Howe himself be our instructor. He says:

"It is true that the efficiency of coal is generally very low, sometimes less than two per cent. of the calorific power of the fuel being utilized. But this low efficiency is only slightly, if at all, due to the form of fuel used, being due to the form of furnace employed."

And again: "While in some kinds of furnaces the efficiency is as low as two per cent., it rises in well-designed Siemans' furnaces to 20 per cent., in cupola furnaces to even 50 per cent., while in iron blast furnaces even 80 per cent. of the heat generated is utilized." Evidently the writer fully understands that the actual calorific power of coal cannot be exhibited in any furnace whatever. He will therefore frankly acknowledge, if as fair minded as I suppose, that even M. Deville's "elaborate investigations" while experimenting with his locomotives, did not decide the actual calorific power of oil.

The respective latent heat values of anthracite coal and petroleum are as 1 to 1·50 according to some authorities, or as 1 to 2 according to others. We will consider them as 1 to 1·50.

M. Deville calculated the respective efficiencies of coal and oil to be, in his furnaces, as 1 to 1·18, as appears from Mr. Howe's statement. He did not therefore secure as good a comparative combustion or at least as thorough an application of generated heat with oil as with coal.

Yet it is now a demonstrated and fully conceded fact that a much greater proportion of the inherent calorific power of oil can be made efficient than of coal. Who next will be foolish enough to quote M. Henri St. Clair Deville—no matter how deservedly "illustrious"—as infallible authority on the fuel question?

Nevertheless I fully agree with Mr. Howe that there is "no need of enormously costly experiments" in this direction. I have myself spent about five years of close application to this matter, at an average expense for experiments and personal support of $1,000 per year. I had not labored more than three months before I secured a good combustion of the lighter grades of crude petroleum, within a ten-horse boiler; and instead of using 302 gallons to 2,240 lbs. of coal, according to Mr. Howe's estimate, I used not more than 127 gallons, with the credit of keeping a higher and more steady steam pressure. I have done much better since, in running boilers both small and large. The apparatus which enables me to manage successfully a 20-horse-power boiler can be retailed at $25. Appliances for a 100-horse-power boiler cost about three times as much, and I will undertake to keep a steadier and more efficient fire night and day, for steam generation, than can be kept with coal.

The practicability of my small invention for at least the simpler metallurgical processes is now shown. Its economy is yet to be demonstrated. Can I judge fairly what that economy will be from the results of my experiments with boilers? Certainly not. Let us consider the reasons why:

We will imagine that crude petroleum had been the only available fuel from the first, and that a philosophically correct method of feeding and managing it under combustion had been known. Is it likely that the exact form of boilers now in use, with a smoke-stack of identical size and height, would have been devised to secure the highest possible efficiency of the fuel? But no inventor of an oil-burning method at this late day, with coal and wood nearly everywhere available for boilers already purchased, can expect to have an expensive series of experiments conducted in order to furnish him with a boiler exactly adapted to his purpose of generating

steam with the least possible expenditure of oil. We must take what we have; adapting fire chambers as well as we may to our new fuel; and letting our flames drift where a pre-ordained draught shall please to take them.

But not so with furnaces for metallurgical purposes. They require to be often torn down and rebuilt, and may with no added expense, be modified to suit an oil fire, giving economic results that could not possibly be obtained without such modification. If I discover I can make two barrels of oil do the work of a ton of coal when running boilers (which cannot be reconstructed to suit my purpose) am I not fairly justified in supposing that I can truthfully record a better comparative result after a little slightly expenive experimenting with metallurgical furnaces?

I hold these propositions to be incontrovertible, to-wit:

1. The commercial values of all fuels depend not upon their latent (or actual) calorific powers, but upon their practical efficiencies.

2. Since even in so simple a matter as feeding coal to the grate-bars different stokers will cause widely different amounts to be consumed in order to secure a given result, evidently the quantity of oil consumed for the same purpose, will largely depend upon method and management in supplying it to the fire chamber.

3. That form of furnace which will secure the highest possible efficiency of coal consistent with the special process it is designed to carry on, may utterly fail to exhibit the highest possible efficiency of petroleum.

4. It appears that the efficiency of coal in the various known furnaces used for metallurgical purposes, varies from less than 2 to 80 per cent., and that it is impossible to build two furnaces so exactly alike that, when tended by the same stoker, their respective consumptions of fuel will be absolutely identical. Therefore:

5. The best attainable efficiency of petroleum as fuel can only be shown by the application of the best invented method, to a furnace especially adapted to its use.

As to the probability of petroleum ever competing with coal for metallurgical purposes, I can only give my individual opinion, based upon the results (well testified to by disinterested observers) of my five years' painful labor. Wherever 105 gallons of crude oil (2½ barrels) equals in price one ton of bituminous coal, it will save money and labor to use petroleum for steam generation. I speak well within bounds, for I have testimonials to show better results.

If an iron-heating furnace requires 1½ tons of coal to prepare it for work, I will by merely dropping the velvetry, be ready for a charge in 2½ hours from the time of firing after a consumption of but 60 gallons of crude petroleum. That is to say I have done so much already. With a furnace built expressly to favor my method I might do better. What I could do in steady running with a good furnace of old or new style I do not know. A few hundred dollars spent in experimenting would tell.

The only puddling I have done as yet was reported. I did the work under great disadvantages. It could be better done (setting all questions of economy aside) in the same furnace with better conditions. Still, the practicability of my method for puddling was fairly demonstrated.

Let it be understood that I do not claim that more heat-units are producible from oil than the chemist can discover in the laboratory. Here is what I claim:

1. The combustion of oil can be rendered much more nearly perfect than that of coal, so giving a far greater efficiency in proportion to its calorific power.

2. Furnaces (with their fire chambers, necks and smoke stack) can, by well considered changes, be so adapted to the peculiarities of the oil fire as to allow much closer contact of flame and metal than any that can be successfully operated with coal.

3. The best method of burning oil will give the best results if judiciously applied.

No method of burning oil can be good that requires "enormously costly experimenting" and calls for expensive and complicated apparatus before it can be made available for actual work.

In view of all these considerations I am justified in believing that with a fair opportunity (which I have never yet had), I can utilize my method of burning crude petroleum for various metallurgical purposes (as heating iron and steel, puddling, reducing ores in small furnace, etc.), and can make it economical throughout a very large territory in the United States, the Canadas, Mexico and Russia, if not in the actual vicinity of coal beds, or up to the very vent of the great gas wells. There is a place for crude oil in metallurgical work.—*Iron Trade Review.*

BARNSDALL BROS. are testing the territory between the Allegany river and a point three quarters of a mile south-west of the Wardwell development.

CRUDE MARKET FOR JULY.

The month of July has afforded a very satisfactory advance in the price of crude certificates. The plane of values between 55 and 60 cents has apparently been left behind for some time to come, and petroleum is again bringing a price approaching more nearly its average cost of production. The month opened with prices on the first at 59½ cents; they sagged off the same day to 57½, which proved the lowest during July. The market then became very dull, moving in an unsatisfactory kind of way between 62½ and 58½ cents until the 15th, when a change for the better began to manifest itself, and there was an advance to 66¾ cents. A number of rapid fluctuations followed about this point, and on the 28th, 68⅛ cents was reached. The following day it got above the 70 cent point, and on the 31st, 75 cents, the highest point for the month was attained. The month closed with 73⅜ bid in nearly all exchanges.

The course of the market has been directed mainly by the developments in the Wardwell pool. Here a limited area of gusher territory has been perforated by a persistent lot of producers. A stirring struggle has taken place, each eager fortune hunter being animated by but one desire—to be the first to tap the hidden reservoirs of wealth. The scenes of excitement that accompanied the Cherry Grove furore, two summers ago, have been repeated at Wardwell on a smaller and less interesting scale. Profiting by the lesson learned at that time, the earnest workers for market benefits around the bull rings have been anxiously watching for the decline that all knew was a necessary outcome of the rapid puncturing of the Wardwell bubble. Telegrams that told of the sudden failing of thousand-barrel gushers fluttered about the exchanges like forest leaves after a frost, and the market was set rolling upward with an enthusiastic strength that downed all bearish opposition.

THE CLEARANCES.

	July. Barrels.	June. Barrels.
Bradford Oil Exchange	97.022,000	85,084,000
Bradford Prod. Pet	29,600,000	35,842,000
Oil City	161,452,000	128,674,000
New York, N. Y. Pet	201,166,000	199,452,000
New York, National	268,024,000	304,527,000
Pittsburgh Oil (old)	4,896,000	6,160,000
Pittsburgh Petroleum (new)	68,834,000	85,895,000
Total	830,994,000	845,634,000

CONSPICUOUS in the throng of Wardwell operators, are some men who have walked the oil fields for years. They are now on the crest of the tidal wave and drive the best "turn outs" the stables of Warren afford. This is a land of varying fortunes.

THE REFINED MARKET.

The tone of the refined market during the past month has been strong, with a decidedly upward tendency, and the amount of business transacted has been satisfactory to all concerned. Prices have been advanced from one-half to three-fourth cents per gallon, and the advanced rates are firmly maintained. European markets are in sympathy with the American and the sharp advance in crude certificates.

The East Indies and the Mediterranean ports still continue large customers for refined in cases, but there has been no change in the quotations as compared with the June prices. Stocks at the principal European ports are still very much behind what they were one year ago, and refiners anticipate increased exports for the remainder of the year.

	New York.	Philadelphia.	Baltimore.	London and Liverpool.	Bremen.	Antwerp.
	Cts.	Cts.	Cts.	Pence.	Marks.	Francs
T 1	7¾	7½	7½	6¼	7 40	18⅛
W 2	7¾	7½	7½	6¼	7 40	18⅛
T 3	2¾	7½	7½	6¼	7 40	18⅛
F 4	—	—	—	6¼	7 40	18⅛
S 5	—	—	—	6¼	7 40	18⅛
M 7	7¾	7½	7½	6¼	7 40	18⅛
T 8	7¾	7½	7½	6¼	7 40	18⅛
W 9	7⅝	7¼	7¼	6¼	7 40	18⅛
T 10	7⅝	7¼	7¼	6¼	7 40	18⅛
F 11	7¾	7½	7½	6¼	7 30	18⅛
S 12	7¾	7½	7½	6¼	7 30	18⅛
M 14	7¾	7⅝	7⅝	6¼	7 30	18⅛
T 15	7⅞	7⅝	7⅝	6¼	7 30	18⅛
W 16	7⅞	7⅝	7⅝	6¼	7 40	18⅛
T 17	7⅞	7⅝	7⅝	6¼	7 40	18⅛
F 18	7⅞	7⅝	7⅝	6⅜	7 40	18⅜
S 19	7⅞	7⅝	7⅝	6¾	7 40	18⅜
M 21	8	7⅝	7⅝	6⅜	7 40	18⅜
T 22	8	7⅝	7⅝	6⅜	7 40	18⅜
W 23	7⅞	7⅝	7⅝	6⅜	7 40	18⅜
T 24	7⅞	7½	7½	6⅜	7 40	18½
F 25	7⅞	7½	7½	6⅜	7 40	18½
S 26	7⅞	7½	7½	6⅜	7 40	18½
M 28	8	7⅝	7⅞	6⅜	7 40	18¾
T 29	8⅛	7⅞	7⅞	6⅜	7 40	18¾
W 30	8⅛	7⅞	7⅞	6⅜	7 40	18¾
T 31	8¼	8⅛	8⅛	6⅝	7 65	19¼

JULY DAYS IN MACKSBURG.

When the Mills & Mullin well, on the Clark farm, about 100 rods farther north than the Laing well, took rank with a lighter grade of producers, the drill had not been started at the Union Co.'s well, on the Neptune farm, and the imaginative producer concluded the developments would drift from the northeast to the eastward. The Neptune well, northeast of the old development was demonstrated to be dry and two test wells, the Union Oil Co.'s, on the Hiddleston farm, and D. W. Clark & Co.'s well on the Armstrong, covering the country for two miles south are numbered with the dusters. These three wells, the Union Oil Co.'s on the Neptune farm, D. W. Clark & Co.'s well on the Armstrong, and the Union Oil Co.'s on the Hiddleston, condemn a large amount of territory

which looked dangerous not longer ago than May. There appear to be two directions in which the Macksburg field may be shaped by the future play of the drill. The trend of the belt may be farther to the north taking a northeasterly and southwesterly direction or it must go to the northwest and southeast. The drill has not been hurried in this part of the country, which is beyond the reach of the shut down movement. During the month of July seven wells were completed, having a production on the last day of the month of 91 barrels. Including some test wells to be drilled on Moss and Newell Runs, there were 13 rigs up and building, and 15 wells drilling in the Ohio field on the first day of August. The following is the list of wells furnished, and the new work under way.

WELLS COMPLETED.

Farm. Owner.	Barrels.
Atkinson, Clark & Co	20
Schilling, Syndicate No 1	18
Smithson, Macksburg Oil Co	15
DeLong, "	8
Pod Stevens, Mills & Mullin	15
Paton, "	15
Hiddleston, Union Oil Co	dry
Wells	7
Production	91
Dry	1

WELLS DRILLING.

Farm. Owner.	Depth.
Atkinson, Decker & Sons	1000
Crawford, Borckman & Laney Bros No 3	sand
" " No 4	1200
George Rice, George Rice	900
" "	200
Coal Lands, Ohio Coal Co	1500
Schilling, Syndicate No 2	rig
Gordon, " No 3	rig bldg
Pod Stevens, Mills & Mullin	rig bldg
Patton, "	rig
Hobbs, St James Oil Co	500
Kathary, Kathary	900
Perkins, C J Garvey	1000
Clindinn, "	rig bldg
G Stevens, Mills & Mullin	1300
Gilmore, Geo Nesbitt	1400
Morris, Union Oil Co	1300
Miller, McDonald	1000
Armstrong, Clark & Co	1100
Marke, Decker & Co	rig
Perkens, J C Lineman	rig
Atkinson, D W Clark & Co	rig
Schilling, Austin & Mills	rig
Near Harrietsville, Geo Nesbitt	rig bldg
Near Warren, W E Brown	rig bldg
Newell Run, Gilchrist & Co	400
Moss Run, C J Garvey	rig
Fifteen Mile Run, Coast & Rice	rig
Rigs	13
Drilling	15
Total	28

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to Aug. 2, for the years 1883, 1884, were as follows:

	1884. GALLONS.	1883. GALLONS.
From Boston	3,262,709	3,012,672
Philadelphia	43,774,941	43,152,011
Baltimore	7,152,742	5,231,207
Richmond	....	173,449
Total	54,190,392	51,569,339
From New York	219,599,298	242,176,919
Total exports from United States	273,789,690	293,746,258

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to August 9th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
GREAT BRITAIN.—London	7,388,587	24,393,299
Liverpool	2,620,986	4,264,362
Bristol	1,344,373	1,401,474
Ireland	2,600,530	3,250,428
Other ports	3,627,830	3,834,201
GERMANY—Bremen	21,279,841	27,556,503
Hamburg	22,334,963	23,268,546
Konigsburg and Stettin	4,741,404	2,552,514
Dantzic	537,988	302,500
Other Ports	1,372,183	575,300
FRANCE—Marseilles	....	....
Havre	....	....
Norway and Sweden	4,466,922	6,378,955
Russia	103,981	1,220,382
Denmark	5,338,128	5,760,799
Belgium	18,518,197	24,201,036
Holland	11,636,431	8,950,149
Spain	90,000	142,770
Portugal	674,785	1,189,917
Gibraltar and Malta	2,563,550	1,092,150
Italy	1,431,451	1,043,005
AUSTRIA.--Trieste, etc	3,153,579	6,596,727
Greece	163,400	1,174,320
Turkey in Europe	1,599,730	2,343,131
Turkey in Asia	2,294,880	2,329,043
India	18,088,420	9,350,110
China, Japan, etc	15,596,470	17,526,190
East Indies	17,190,220	20,259,830
AFRICA.—Alexandria, etc. E	1,383,340	1,275,710
Canary Islands	67,800	89,345
Other Ports	1,868,092	3,329,709
Australia	1,243,424	1,281,564
New Zealand	394,928	371,900
Sandwich Islands	204,080	142,500
SOUTH AMERICA.—Brazil	2,703,103	3,240,209
Argentine Confederation	2,357,270	2,423,370
Chili and Peru	441,862	1,089,000
U. S. Columbia	274,090	154,308
Venezuela	419,084	401,725
Other Ports	51,300	113,461
Central America	172,071	106,075
Mexico	750,090	780,403
British North American Colonies	426,248	414,784
Cuba	324,821	134,646
British West Indies and Br. Guiana	986,808	1,122,709
Other West Indies	793,188	634,294
Total Galls.	185,560,428	218,063,353

CRUDE.

	1884.	1883.
FRANCE.—Havre	5,262,698	4,417,536
Marseilles	2,685,944	1,671,386
Bordeaux	1,274,941	1.198,454
Dunkirk	3,917,188	3,832,184
Other Ports	5,429,819	4,757,884
Antwerp	....	....
Bremen	....	753,616
Norway and Sweden	....	62,374
Spain	7,281,688	5,740,579
Cuba	1,740,616	1,130,911
Other Ports	5,156,415	1,509,999
Total Galls.	32,749,309	25,080,923

NAPHTHA.

	1884.	1883.
Great Britain	1,908,973	3,341,785
France	1,034,587	1,643,695
Germany	521,780	1,561,081
Other Europe	662,565	1,214,890
Various Ports	123,428	54,940
Total Galls.	4,251,333	7,816,391

RESIDUUM.

	1884.	1883.
To all Ports	2,533,625	4,106,716

	GALLONS.
Total Refined since January 1, actual shipments	187,338,382
do do do do crude equivalent	249,784,509
do Crude do do actual shipments	32,963,247
Grand Total Crude and Crude equivalent . . . . galls.	282,747,756
Same time, 1883	315,832,060

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, Aug. 9, 1884:

PORTS.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	44	37	12	12	4	109
Philadelphia	42	11	2	2	0	57
Baltimore	13	0	0	0	1	14
Boston	1	3	0	0	0	4
Total Aug. 9	100	51	14	14	5	184
Total July 9	64	45	16	4	2	131
Difference	36	6	2	10	3	53

AN APPARATUS FOR THE MANUFACTURE OF VAPOR FUEL FOR HEATING PURPOSES.

A new improvement was introduced on the second of June at the rolling mills of the Joliet Iron and Steel Company, says the Chicago *Inter-Ocean*, which is pronounced by mill men the most important since the introduction of the Bessemer process of steel making. In the saving of labor and fuel, as well as other incidental expenses, it is fully as important as the direct process lately introduced at this plant, which revolutionized the entire process of making rails. The invention consists of an apparatus for the manufacture of what is called vapor fuel for heating purposes, and takes the place of the present expensive system of heating the furnaces by means of coal gas. It is called a "thermogen." Its cost is merely nominal, and it does away with a heating plant that cost $50,000, including the gas house, and the tremendous daily consumption of coal. It is a small cylindrical concern about four feet long and eighteen inches in diameter, with a shell four inches thick. This is placed on a small furnace about seven feet long and four feet wide, and is kept when in use at a cherry-red heat, and is connected with a crude petroleum oil tank by a small pipe, and also by a steam pipe from a twenty-five horse-power boiler. This boiler generates the hydrogen gas, and the thermogen makes the oil gas, and the two are combined by pipes that bring the two in contact, making the vapor fuel and causing the necessary combustion. Three furnaces are now heated by this vapor fuel, and the results are far more satisfactory than those obtained by means of the coal gas system. It throws about fifty men out of employment, and saves a very cumbersome and disagreeable system of machinery. These thermogens will be introduced into all the departments of the plants where boilers are required, and will take the place of the expensive system at present in vogue for heating the boilers in the blast furnaces, converting mill, steel mill and machinery departments. They will also be introduced into the works of the Lumbert & Bishop Wire Fence Company, and are doubtless destined to revolutionize the present system of heating in factories and mills everywhere. The aggregate amount of coal and expenses thus saved annually cannot be computed, but will be very great. The inventor is a Washington mechanic. The Chicago Vapor Fuel Company is placing the thermogens in its plant.

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590
April, 1884	34,370	12,261	19,162	65,793
May, 1884	34,946	12,193	19,549	66,688
June, 1884	35,701	11,672	19,977	67,350
July, 1884	34,718	11,114	20,870	66,702

SUMMARY of the statements of the National Transit Co., for June and July, 1884.

	JULY.	JUNE.
Receipts from all sources	1,921,905.71	1,949,395.34
Deliveries	1,541,628.30	1,641,738.72
Gross stocks end of month	39,109,754.05	38,749,931.08
Sediment and surplus	2,794,273.01	2,805,526.19
Total liabilities end of month	36,315,481.04	35,944,404.89
Outstanding acceptances	29,320,587,10	29,603,038.60
Credit balances	6,994,893.94	6,341,366.29

The above receipts from all sources for July were made up as follows:

Transferred from United Pipe Lines, as reported to N. F. Hilton, Esq., representing the Conference of Oil Exchanges	13,650.86	
Less sediment and surplus	1,280.63	
Net amount from United Pipe Lines		12,370.23
Runs from wells		1,776,737.91
Received in iron tanks		132,797.57
Total barrels		1,921,905.71

The above receipts from all sources for June were made up as follows:

Transferred from United Pipe Line as reported to N. F. Hilton. representing Conference of Oil Exchanges	89,704.60	
Less sediment and surplus		
Net amount from United Pipe Lines		89,704.60
Runs from wells		1,709,745.69
Received in iron tanks		149,945.05
Total		1,949,395.34

SUMMARY of the statement by the United Pipe Lines August 10, 1884:

Acceptances and certificates July 31	16,638.75
Credit balances July 31	48,127.84
Total liabilities July 31	64,766.59
Gross stocks	77,048.73
Sediment and surplus	12,282.14
Receipts from all sources	
Total deliveries	12,370.23

JUNE SUMMARY.

Outstanding acceptances and certificates, June 30	16,638.75
Credit balances	60,498.07
Total liabilities June 30	77,136.82
Gross stocks June 30	90,696.32
Sediment and surplus	13,559.50
Receipts from all sources	....
Net stocks delivered to National Transit Co June	89,704.60

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for July, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of July		2,543,063.41
Quantity of crude petroleum at close of July	2,661,943.78	
Less sediment and surplus	157,035.87	
		2,504,907.91
Receipts during July		275,483.04
Deliveries during July—to refiners	187,320.80	
" " " —to other parties	132,797.57	
		320,118.37
Outstanding certificates, accepted orders, etc		1,797,000.00
Credit balances		707,907.91
Total liabilities July 31, 1884		2,504,907.91

JUNE SUMMARY.

		Barrels.
Quantity of crude petroleum in custody at beginning of June		2,567,668.80
Quantity of crude petroleum at close of June	2,708,144.18	
Less sediment and surplus	165,080.77	2,543,063.41
Receipts during June		292,112.43
Deliveries during June—to refiners	172,784.29	
" " " —to other parties	149,945.05	
		322,729.34
Outstanding certificates, accepted orders, etc		1,993,000.00
Credit balances		550,063.41
Total liabilities June 30, 1884		2,543,063.41

RUNS, SHIPMENTS AND STOCKS.

RUNS OR RECEIPTS.

Pipe Line.	July, 1884.	June, 1884.
National Transit Co	1,776,737.91	1,709,745.69
Tidewater	275,483.04	292,112.43
Octave Oil Co	3,262.57	2,719.63
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	6,960.93	8,878.99
Cranberry Pipe Line	5,324.19	7,059.38
Total	2,067,768.64	2.020,516.12
Daily average	66,702.21	67,350.54

In the above runs only the oil received by the National Transit Co. directly from the wells, is included.

DELIVERIES OR SHIPMENTS.

Pipe Line.	July, 1884.	June, 1884.
National Transit Co	1,541,628.30	1,641,738.72
Tidewater	187,320.80	172,784.29
Octave Oil Co	3,044.40	1,861.98
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	3,551.85	1,946 99
Cranberry Pipe Line	5,724.41	8,877.44
Total	1,741,269.76	1,827,209.42
Daily average shipments	56,169.99	60,906.98

In the above shipments only the oil delivered to refiners is included.

Daily excess of runs over shipments, July, 1884	10,532.22
Daily excess of runs over shipments, June, 1884	6,443.56
Daily excess of runs over shipments, May, 1884	10,239.88
Daily excess of runs over shipments, April, 1884	11,020.89
Daily excess of runs over shipments, March, 1884	4,144.98
Daily exeess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

Pipe Line.	July 31, 1884.	June 30, 1884.
National Transit Co	36,315,481.04	35,944,404.89
Tidewater	2,504,907.91	2,543,063.41
Octave Oil Co	8,198.68	8,412.75
Charley Run	3,717.00	3,717.00
Shaffer Run	30,636,32	30,636.32
Franklin (limited)	37,320.23	34 193.26
Cranberry Pipe Line	23,883.38	24,283.60
United Pipe Line	64,766.59	77,136.82
Total	38,988,911.15	38,665,848.05

Stocks increased July, 1884	323,063.10
Stocks increased June, 1884	190,320.23
Stocks increased May, 1884	322,981.75
Stocks increased April, 1884	1,945,919.83
Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	386,004.51

	Receipts.	Deliveries.
Daily Average July, 1884	66,702	56,170
Daily average June, 1884	67,350	60,907
Daily Average May, 1884	66,688	56,448
Daily Average April, 1884	65,794	54,773
Daily Average March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52,737
Daily Average February	65,208	44,352
Daily Average January	65,125	43,813

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to August 1st, 1884.

1882.	Ch'y Gr've.	Cooper.	Balltown.	Total.	Daily Av'ge
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
April	31,191	126,860	71,989	230,040	7,668
May	30,010	107,514	70,069	207,593	6,696
Jnne	25,348	89,554	67,508	182,410	6,080
July	16,206	76,762	76,601	169,569	5,470
Total Aug. 1, '84	3,286,536	1,868,371	1,321,014	6,475,921	7,869

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to Aug. 1st, 1884. Cherry Grove has produced 3,286,536 barrels, Cooper 1,868,371 and Balltown 1,321,014 barrels. The daily average runs from the three fields during July were 5,470 barrels, a decrease of 610 barrels from the June figures. The daily average runs from the old Cooper section during July were 1,199 barrels, and of the Henry's Mill pool 1,277; making a total of 2,476 barrels. The daily average for the Cooper district for June was 2,985 barrels. The Balltown field holds its own with a July average of 2,471 barrels, against 2,250 in June and 2,260 barrels in May. The two new white sand fields, Baldridge and Wardwell, are enumerated in the list. The pipe line runs from these sections since April 1st, have been as follows:

Month.	Baldridge Runs.	Daily Average.	Wardwell Runs.	Daily Average.
April	25,325	844	14,263	475
May	32,885	1,061	31,451	1.015
June	29,070	969	61,260	2,042
July	27,545	889	132,595	4,277

CRUDE CHRONOLOGY FOR JULY.

1—Hays & Gartlan No. 1, McWilliams farm, Wardwell, still guarded, but reported to have made 1,500 barrels the first 24 hours.

2—Hays & Gartlan making 60 barrels per hour and drilling.

3—The Denman well at Macksburg burned, burning three men, Ayres, Stevens and Ed. Mullen. Rumors started that the well had been plugged, and the fire resulted because of largely increased flow of oil and gas when plugs were drilled out.

5—Armstrong well, Baldridge, got to pumping and estimated good for 100 to 150 barrels.

7—Porcupine Oil Co.'s 26, Balltown, reported good for 500 to 600 barrels first 24 hours. Emery & Agnew No. 2 not showing so good as was expected.

8—Syndicate No. 1, Macksburg, rated at 90 to 100 barrels.

10—Grace & Co. No. 1, Wardwell, shut down on top of sand and reported showing good.

11—Grace No. 1 started at better than a 1,000-barrel gait. Market sustained by strong stock market and furious buying by Roe. Thorne Hill Oil Co.'s well, in Marshall township, Allegheny county, Pa., reported in sand and showing for 100 barrels.

12—Emery & Agnew No. 3, Balltown, made 700 barrels the first 24 hours. Porcupine Oil Co.'s 27 reported 63 barrels for the first hour. Drilling began at the Hoffman mystery, lot 461. Further reports from the Thorne Hill well.

14—Hoffman plugs drilled out and sand penetrated. Not good for over 50 barrels and sand supposed to be of Stoneham variety. Hays, Island No. 1, reported dry.

15—Anchor No. 6, Cobham lands, drilled into sand and led off at a tremendous gait.

16—Hays & Co. No. 1, on Rogers Island, drilled in and reported good for only 200 barrels.

17—Hays, Island No. 1, made 230 barrels first 24 hours. Grace & Co No. 2 started at 100 barrels per hour.

18—Staley & Ross No. 1 rated at 75 barrels the first hour.

19—Grandin No. 27, Balltown, reported having made 500 barrels in 24 hours from first streak of sand, and largely improved in second stratum. Clark & Foster, 3195, reported dry.

21—Location of Grandin 27 proven south of the southwest end of Balltown belt, and first 24 hours gauge 625 barrels.

26—Staley & Ross No. 2 not so large as expected and early decadence of Wardwell pool argued. Very heavy charters noticed. Wardwell production at its height and placed at 10,000 barrels.

28—Wardwell production rated at 8,500 barrels.

29—Barnsdall No. 2 rated good for 350 to 400 barrels first 24 hours.

30—Gartlan No. 4, on 3195, in sand and showing rather light.

31—Twelve-hour gauge of Wardwell, ending 6 a. m., 4,535 barrels, with an increase expected for succeeding 12 hours.

THE World's Industrial and Cotton Centennial Exposition, which opens in New Orleans on December 1, 1884, and closes May 31, 1885, is an event of national importance, which commends itself to the kindly interest of all citizens. The general government has appropriated $1,300,000 for the purposes of the exhibition, the citizens of New Orleans have contributed $500,000, the city has appropriated $100,000, the State of Louisiana $100,000, and Mexico appropriates $200,000. Every State and Territory in the Union will be represented, and nearly all the leading nations and countries of the world. The main building, now nearly completed, is the largest structure of the kind ever erected, covering under one continuous roof thirty-three acres of space. The Government building will be 885 feet long and 565 feet wide. The Horticultural Hall is to be 600 feet by 190 feet, with a tower 105 feet high. It will contain the most magnificent floral and horticultural display ever grouped. Besides these great buildings are the Art Gallery and numerous other structures in full keeping with the magnitude of the enterprise.

THE oil scouts are again in the saddle, giving the Wardwell development the solicitous care which the speculative craze demands. Nearly all the old timers who have lost a vast amount of sleep in keeping pace with the wild catter, are dividing their time between the Warren and Forest county front and Macksburg. Among the number are J. C. Tennent, P. C. Boyle, Sam. Watson, B. S. Tupper, G. H. Torrey, Joe P. Cappeau and S. B. Hughes.

THE Mills & Mullin well, on the Granberry Stevens farm, about one-third of a mile due east of the Denman well, made as good a start as the Laing. It is in the same valley but considerably farther north than the Mills & Mullin well which averaged eighteen barrels the first ten days.

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

PUBLISHED MONTHLY BY

McMULLEN & SNELL.

BRADFORD, PA.

W. C. ARMOR, MANAGER.

J. C. McMULLEN. A. L. SNELL.

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The Bradford office of the AGE is in the Producers Exchange Building.

THE PRODUCING REGION.

ALLEGANY FIELD.

The Allegany field is almost as quiet as it was when the lamented Taylor was following up the sand rock indications which led to the discovery of the initial well. In four of the six townships in which the outlines of the district are penciled, no new rigs were up or building on the first of August. In the other two townships only six new rigs were up or building. Throughout the section there were 67 old rigs and 14 drilling wells, making a total of 87. On the first of July there were 18 new rigs, 57 old ones and 31 wells drilling, making an aggregate of 106. Prospectors drilling in the South Alma section demonstrated the streak which runs in a northeasterly and southwesterly direction through the wells on lot 106 to be narrow. Hall & Co.'s well, on lot 105, and Leasure & Co.'s test, on 64, came in dry. The former is situated on the western side of the belt, and the latter on the eastern side. Two wells on the imaginary streak which was to connect the Snow well, on lot 45, Wirt, with lot 10, Clarksville, made a light crude showing, but are not considered worth tubing by their owners, Coast & Co. and Kern & Co.

BRADFORD.

The development of a narrow streak of oil at Wardwell, which afforded a maximum production of 10,000 barrels per day, has wrought a quiet over 75,000 acres of territory in the Bradford field. The count August 1st showed that 31 wells were finished in July, with a new production on the last day of the month of 451 barrels. During June 76 wells were added to the producing list, having a yield on the last day of the month of 885 barrels. Only six new rigs could be found up or building in the district, against 20 enumerated July 1st. The old rigs which had been standing for 30 days or longer, numbered 65, and at 25 wells the drill was vibrating. At Windfall Station, on the K. & E. R. R., White & Young pumped a well for lubricating oil, which was encountered at a depth of 550 feet. It did not prove profitable as a producer of heavy crude, and was afterwards drilled to the third sand. The Spiller well, on the Spiller Farm, along the eastern edge of the field, proved quite a heavy gasser. Operations on the streak at the Cole Creek front are being materially curtailed, as all parties operating have signed the shut down movement, and are now prosecuting their work by permission of the Executive Committee.

Barnsdall Brothers are drilling a well on warrant 2,248, near Buttsville. It is located a short distance from the well drilled by Mumford & Chenney. Higgins & Co. are lowering the drill on the Ormsby & Newton property on the southeastern part of warrant 2,252. In a northeasterly and southwesterly direction these two ventures are 500 rods a part. Further to the northeast the country situated east of the Cole Creek development overlies an ocean of salt water.

WARREN AND FOREST.

The discovery and development of the Wardwell field shows that a streak of oil may lie undiscovered for years after a cordon of dry holes has been drilled around it. On all sides and in close proximity to the field test wells had been drilled with indifferent results. In some there was a fair showing of oil, while others were barren of crude. There is another noticeable feature about this pool. A short distance beyond its dusty border prolific oil territory is found. It is as completely hemmed by paying oil rock as it was thought to be by dry holes. The eye requires only a short visual range in travelling from the old Warren field across the Wardwell pool to the Stoneham district. Since the first of July that portion of the district northeast of the Allegheny river divided up into small lots, upon which the crowd could get an opportunity to hasten the drill has been thoroughly perforated. A large number of the gentlemen who handle the explosive compound are congregated here, and the rock formation has been well shaken with glycerine. In Warren and Forest counties 90 wells were completed in July, having a new production of 8,114 barrels on the last day of the month. Forty-three of these wells found a location on the Wardwell streak, and in the old Glade district. Their production on the last of the month was 7,266 barrels. In the two counties there were 22 new rigs, 43 which had been standing for 30 days or more, and 61 wells drilling, making a total of 126 against an aggregate

of 119 found on the first of July. The Executive Committee of the Associated Producers voted to raise the embargo on drilling in the Wardwell section, and the drill from that time in the month had uninterrupted play. On the 2d day of August there were 9 rigs up and building and 20 wells drilling on the north side of the river. On the south side there were 7 rigs and 11 wells drilling, making a total for Wardwell on that date of 16 rigs and 31 drilling wells. The pipe line runs during the month of July averaged 4,277 barrels per day. Toward the close of that month a gauge of the field showed a production of 10,000 barrels, probably the highest point which will be reached during its history. For the 24 hours ending at 7 a. m. July 29, the Wardwell district produced 8,475 barrels. A twelve-hour gauge taken on the morning of August 8th disclosed a production of 5,105 barrels from 116 wells. The porous pebble sand finds its greatest thickness at the northeastern end of the belt, about the Chambers No. 1. It overlies a whitish-blue sand, and the drill has shown that it grows thin on the western side of the belt as the development progresses to the southwest. A larger part of the field affords an oil-bearing rock from 8 to 10 feet in thickness. The torpedos, and they are frequently used, vary in size from ten to forty quarts. The first time a small shot is used, and the size is gradually increased as the number of times is multiplied. The Hoffman well, which for a long time was kept a mystery, ceased to have any importance as soon as the drill struck the sand at the Barnsdall test. This last mentioned well was plugged after it tapped the sand. The first 24 hours it produced 227 barrels while the plugs were being drilled out. At its best the well did 330 barrels in one day. The sand was struck at the Barnsdall at a depth of 1,029 feet. There was ten feet of pebble rock and a total depth of sand of 16 feet. The Reid and Brenneman well is one location west of the Barnsdall. It produced 101 barrels the first 13 hours after it was drilled into the sand. On the 16th inst. there were 15 rigs up and building and 25 wells drilling in the field. There is still room for an extension to the southwest, as the limit in that direction has not been found.

BALLTOWN.

The last well finished at the southwestern end of the Balltown belt indicates that the limit to the field in that direction has not yet been reached. May, Kelly & Grandin's No. 27 started at 600 barrels; their No. 28 has been drilled to the top of the sand and shut down by the owners, who favor the movement for the suspension of drilling. The unexpected strike of Emery & Agnew has set the drill in motion, but no definite lead has been penciled from the initial well. There is still a doubt as to whether it is a chance strike or a spur from the old belt. The Balltown pipe line runs for July indicate that the production was larger for that month than in June, providing stocks remained unchanged.

COOPER.

The canvass on the first of the month gave one old rig standing and one new one. From Lower Sheffield to Gusher City the drill had ceased to vibrate, thus shelving the Cooper district for the nonce, so far as features of interest to speculators are concerned. Ten wells were completed during July with a production on the last day of the month of 126 barrels.

LOWER COUNTRY.

The lower country felt the depressing influences of a low market during July, and as a consequence was rather quiet. Developments in the "Cranberry Patch" have fallen to a minimum, as appears from the list of operations. At Emlenton the work under way July 1st was nearly all completed, and but little new work started. Even the stimulating premium of 20 cents pipeage saved in that section by dumping the oil, was not sufficient to maintain the rate of drilling. At Mt. Hope, Dr. Galbraith completed a semi-wildcat late in the month, east of the old Mt. Hope district, that may lead to some activity in that quarter in the future, the initial production of the venture being over 50 barrels. This well is the only important development in Venango county.

In the Baldridge district the Armstrong, Boyd & Semple well was completed early in the month, and the work of exhausting the salt water was begun. For two weeks the packer failed to do its duty, but at last it was made tight and the well improved to 160 barrels per diem. "Andy" Shidemantle had his usual luck near the mouth of Thorn Creek, and secured a 50-barrel pumper in a very thirsty looking location. The Johnson duster separates this venture from the Armstrong well, all three being close to the banks of Thorn creek. Fisher Oil Co. No. 7, on the Wallace, completed at the close of the month, started at 50 barrels, being better than expected from its location. It is the most southerly producer on that property, and indicates a connection with the Shidemantle at the mouth of the creek. Phillips Bros., on the McCandless, just east of

the Wallace, is very small, and leaves the Armstrong well apparently in a new pool. At St. Joe, Phillips Bros'. test on the Wheat farm proved dry. It is north and west of developments, and cuts off hopes of extension in that direction, but leaves the east and west line open for further development. The most important well now drilling in that section is Phillips Bros'. No. 2, on the Muenster farm, which will be due in the near future.

THE WILD-CATS.

The opening of the Wardwell pool made the peculiar resources of Warren and Forest counties more conspicuous to the wild-catter. The wide vertical range of rocks in which the oil-bearing sands are found lends a gambler's charm to oil prospecting in this section of the region. On the first of the month the well on Warrant No. 3,561, Forest county, was down six hundred feet and fishing.

The Butt & Palmer well on the southeastern corner of Warrant 3,646, Forest county, came in dry. Morck & Barnsdall will build a rig on Warrant 3,164.

Campbell & Co.'s test well on lot 520 west of the Clarendon development became the burying place of financial hopes. They found a slight showing of crude in the Clarendon sand, which was struck at a depth of 1,120 feet. The drill paused after reaching a level of 1,200 feet. East and northeast of Tidioute some of the "old-timers" in oil prospecting are seeking for a white sand pool. Vandergrift, Si. Andrews & Co. found a dry hole on Warrant 5,228. K. H. McBride is making a test on Warrant 5,224. The old Hoodoo well on Warrant 3,663 makes a crude showing which proves tempting to the seekers after oleaginous wealth. But thus far all tests in the neighborhood have resulted in disappointment to the projectors.

AREAS OF WHITE SAND FIELDS.

Since the PETROLEUM AGE passed into the hands of the present owners they have endeavored to put the white sand pools of the region to the cold test of figures, in order that they might have only their deserved weight in the adjustment of values. In the hands of shrewd manipulators these pools have been used to move the market up and down the scale in such a manner that an observer would believe that the production of a well was an unimportant element in the business. Through the courtesy of the pipe lines, the AGE has been able to present monthly the exact figures on pipe lines runs from the pebble sand fields, which have been used as levers in elevating and depressing the price of crude. As these fields become carefully outlined, figures on areas will be published showing the extent of each particular one and the amount of oil produced per acre. On another page the statistical history of white sand pools is given. The totals found there will be used in this article. In making the following estimates on areas a map drawn to a scale of 200 rods to the inch was used and the results are only claimed to be close approximations. As they were all computed on the same plan, the chances for errors by comparison are eliminated. In speaking of Cherry Grove township, in Warren county, Prof. Carll says: "Cherry Grove is the only township in the county whose boundaries form a complete parallelogram, and whose sub-divisions are uniform throughout. The original warrants composing it contained nominally 1,000 acres; that is 1,000 acres and 5 per cent. allowance for roads, making really 1,050 acres. They were laid out 525 rods long north and south, and 320 rods east and west. Having been subdivided into six lots, the theoretical dimensions of the present tracts are 175 rods north and south and 160 rods east and west; equal to 175 acres. But the original measurements upon the ground were not accurately made, and there is a surplusage of from five to ten acres in nearly all the lots. As the maps are now plotted there are 12 lots in an east and west range and 14 lots in a north and south range, but those adjoining the Forest county line are not full lots."

The Cherry Grove field is found on 23 different lots. The outline of productive territory which was so hastily traced in the year 1882, encloses an area of 2,003 acres. Computed on Prof. Carll's theoretical basis, it was found to be only 30 acres less than when calculated from the map. This famous pool, rich in memories of buried financial hopes, had produced 3,286,536 barrels of oil up to the first of the present month. During July 16,206 barrels were added to the aggregate, an amount not equal to a half day's production when the field was at its flood. Some time will pass before the creaking of the walking beam ceases to keep in unison with the murmur of the hemlocks, but from the present condition of the field, a total average yield of 2,000 barrels per acre will not be obtained.

The Balltown field presents a streak of territory nearly five miles in length. The axial line of the belt has a magnetic bearing in a northeasterly and southwesterly direction of 52°.

The southwestern end of the field may find its limit still farther to the southwest. At present there are 1,755 acres in sight. Up to August 1st the pipe line runs from this field aggregated 1,321.014 barrels, an average of 753 barrels to the acre. It is extremely doubtful if Balltown is able to produce as much oil to the acre as is found in an ordinary red sand field which attracts but little attention while giving up its wealth of crude.

The Cooper tract, which began its eventful history with the striking of the Shannon well in the summer of 1882, has furnished a vast amount of fuel for the fires of speculation. Its largest well—the Reno—which struck the sand December 19th, 1882, was instrumental in producing a depression of 23⅛ cents in the market in eight days. The Anchor Oil Co.'s well, on the Cooper tract, precipitated the panic in the fall of 1882, but is not responsible for the lofty tumbling recorded on the scale of prices during the dark days when many fortunes vanished with the ring of the call bell. The Cooper development, with its many irregularities of outline and different sand levels, furnishes much of interest to the student of oil. Up to the first of this month there stood to its credit on the books of the pipe lines 1,868,371 barrels of oil. The second and third sand territory, which the drill has given a dusty border, covers an area of 3,000 acres. Up to the first of this month the average yield per acre of the section was 623 barrels. Sufficient time has not elapsed to estimate the average output per acre before the district is drained.

During the past three months a white sand pool in Glade township, Warren county, known as the Wardwell development, has been accorded too much attention by the trade. It is slender in outline, and overlies a thin but porous sand. Its northeastern limit is established, its eastern and western bordering lines pretty well defined. The streak, which has an average width of about 100 rods, has a demonstrated length of nearly four miles. As it now appears, a fair estimate on the amount of territory in sight would be 800 acres. The territory lacks the staying qualities and is inferior to any of the pools previously mentioned in this article. At present the pool is in an experimental condition, but there is no doubt about its calibre compared with the three fields which have thrown a baleful light across the petroleum horizon. Estimating Wardwell's probable area and output, there is something ridiculous in the attitude which the speculative trade bears toward this evanescent field. The figures which have been submitted in the foregoing are tabulated as follows:

Field.	Estimated Area, Acres.	Total Pipe Runs to Date.	Average Yield Per Acre to Date.
Cherry Grove . . .	2,003	3,286,536	1,641
Balltown	1,755	1,321,014	753
Cooper	3,000	1,868,371	623
Wardwell	800	. . . .	. .

Up to the first of the year 1884, the 75,000 acres in the Bradford field had produced over 100,000,000 barrels of oil. Oil men familiar with figures showing production of different tracts, are free to admit that the red sand territory of this broad field will have an average production of 2,000 barrels per acre before it has given up its laden of oil. The total acreage of the four pools which have been discovered could have been added to the Bradford field without causing anything more than a ripple on the speculative sea.

THE SHUT DOWN MOVEMENT.

On the 2d of August David Kirk, Esq., Manager of the Executive Committee of Associated Producers, made the following report on the progress of the shut down movement, and furnished a list of the names of producers who had signed the agreement to stop the drill, as well as those actively engaged in pushing new operations who had not:

BRADFORD, Aug. 2, 1884.

To the Oil Producers:

Fifty days ago a few producers met to consider the depressed condition of the trade, and if possible find a remedy. They resolved as a preliminary step to try and get all to unite on a simple proposition, to suspend drilling until the first day of January next. Seven hundred firms, persons and companies have signed the agreement. The result of this partial suspension is before you as shown by the July report in the falling off of new work. While some of this may be attributed to the low price of oil, yet much of it has been accomplished by this union of producers. Hundreds of projected wells have been stopped by mutual agreement, by bringing the parties together, and where it was impossible to suspend entirely, the number, as at Wardwell, for instance, has been greatly reduced.

The market has responded to this sensible action of the producers, and now all interested feel that if the suspension can be continued, and the remainder of the producers be induced to join, that the prices of oil and oil properties will be greatly enhanced.

Union, less work and better pay is fast becoming the rule instead of the exception in nearly every industry. Working in competition to de-

stroy each other is a relic of barbarism. Intelligent labor has found a more excellent way.

Produce no more than is needed and thus get better prices.

Many occupations as scattered and as diversified as the oil producing, the nail, coke and pipe manufacturers for instance, are now well fixed financially where many of them a short time ago were on the verge of bankruptcy.

Could all be united and the "shut down" extended until April 1st, 1885 (and thus avoid trouble of winter work), there is no question but the value of the present plant would be doubled by that time and the income greatly increased in the meantime.

Thus to those who own the present production more money can be made by setting aside than by working.

* * * * * * *

The local committees are urged to make a final effort within the same time to secure all possible signatures and forward the same to me, as a meeting will be held in Bradford on August 21st to declare the "Shut Down" off or on, as the case may be.

By order of the Executive Committee,
DAVID KIRK, Manager,
Bradford, Pa.

There was a meeting of the Executive Committee in Bradford, on the 14th inst., to examine reports from the different sections and make a review of the list of operators who have affixed their signatures to the shut down roll. At that meeting it was found that about 800 signatures had been secured, with fair prospects for securing the requisite number before the time shall have expired. On the 21st of August a public meeting will be held in Bradford, when final action will be taken in regard to the work performed by the committee, and the "shut down" will then be declared "off or on, as the case may be." In order to make the agreements binding which have been signed, the names of three-quarters of those urging the drill during the present summer must be obtained. The numerous crashes in financial circles, seconded by the Wardwell and Macksburg fields, have lent material aid to the shut down movement and made the field canvass comparatively easy.

THE New York Petroleum Exchange, by a vote of 69 to 15, voted on August 6th to deal in securities listed on the regular Stock Exchange, and to change the name of the Association to the New York Petroleum Exchange and Stock Board.

THE IDENTIFICATION RULE.

Below is presented the report of the committee on the "Identification Rule." While the Oil Exchanges are not likely to adopt it, the document will prove interesting as a thorough exposition of the short side of the market. The committee demonstrates how the bears may be hampered and the chances on the two sides of the market equalized. If adopted, it would perhaps benefit the producer, but largely diminish the volume of speculation:

BRADFORD, PA., July 31, 1884.

To Executive Committee of Associated Producers.

GENTLEMEN:—A careful investigation of the manner of handling your product and store has shown us that there are many wrongs suffered to exist which, we believe, are dragging the business toward a lower plane; that are driving capital from your support, and that need your most earnest attention and united action.

As these innovations have been allowed to creep into the Oil Exchanges in an unguarded way, and through means sought for the improvement of the general business, we would recommend the adoption of the following rule by the trade, and think that by so doing many, if not all, of the present abuses will be removed.

Rule —. In all exchanges of the Conference of Oil Exchanges, the buyer of any spot crude oil shall have the privilege of demanding, and it shall be the duty of the seller to furnish at the time of checking or verifying the transaction, the acceptance number of the certificate or certificates representing the oil so sold, and any member having oil carried for his account by another shall be furnished on demand with the acceptance numbers of the certificates of said oil. This identity shall at all times be preserved and in case of clearance the identification shall pass through the clearance house from the seller to the buyer.

Any seller of oil, or member carrying oil for another, who shall refuse or fail to furnish the identification specified, shall be considered in default, and at the request of the purchaser or member for whose account the oil is being carried, the President, or other proper officer of the Exchange shall make demand for such identification, and unless the same is furnished he shall immediately proceed to purchase a like amount of properly identified oil in open board, to be received by the buyer in the transaction, the difference, if any, to be adjusted by the parties in interest, or by the Arbitration Committee.

Puts, calls, buyers, and sellers' options, when

terminated by limit or notice shall become actual transactions, and the member to take such oil from the clearance house must be furnished with an identification of the certificate or certificates which he is to receive.

This rule to go into effect ten days after its adoption by a majority of Exchanges in the Conference of Oil Exchanges, and notice given of the same by the President as provided for in Conference Rule number 29.

We have carefully followed the working of this rule in every conceivable way; endeavored to anticipate its effect on every legitimate transaction; estimated the interest of the many and the few; applied it to ourselves and to others; consulted with representative men in all branches of the petroleum business; submitted it to the study and analysis of accountants; made it the subject of daily talk and criticism, and without hesitation assure you that it will bring about the following results, each one a change from the present, and each desirable for the growth and preservation of your various industries:

1. It will stop the travesty of buying and selling without a representation of property.
2. It will prevent the use and abuse of your orders to buy or sell, to protect the speculative interest of the one who acts as your agent.
3. It will give those buying on margins, or for the purpose of retiring oil, a chance to know what they have bought at the time of purchase.
4. It will give one paying storage and interest charges a chance to know who is the custodian of his property, and that he is getting value.
5. It will give the market a chance to adjust and harmonize itself with the legitimate elements that should control values.
6. It will prevent fictitious sales of oil, on every apparent or threatened weakness, for speculative or panic purposes.
7. It will give all buyers a representation in the business to the amount of the purchase arranged for.
8. It will prevent the drilling of wild-cat wells for the sole purpose of working the markets.
9. It will reduce the burdens of those carrying oil to the actual amount in store.
10. It will end the drama of selling your property, followed by panics engendered by canards of your insolvency to make the transaction profitable.
11. It will take away the revenue of the investment short who draws his income from his bankruptcy, and bring him to you for settlement.
12. It will put the strength or weakness of the market in the hands of the many, instead of the bold few.
13. It will cause the stocks to become the foundation of the business, instead of the superstructure.
14. It will limit the terrors of a new field to the amount of certificates it can *possibly* produce.
15. It will fix values by the demand of the buyer, not the nerve of the seller.
16. It will give capital a just representation in the business.
17. It will prevent the "yelper" from howling the market down every time a broker has an order to sell.
18. It will give oil transactions a legally sound basis, and the oil trade a position in court.
19. It will furnish a written record for the arbitration of differences.
20. It will prevent the calling of additional margins on oil already sold out.
21. It will leave a trail by which a fraudulent, lost or stolen certificate can be traced.
22. It will purify the Clearance House, by making a reality in clearances.
23. It will increase the banking business, by increasing the actual transactions.
24. It will prevent, on the opening of a new well, the sale of as many fictitious millions in a day, as the well can produce thousands of actual oil in its natural lifetime.
25. It will make banks and capital the friends, instead of the enemies of the trade.
26. It will give the purchaser an even start, instead of allowing the seller one day advantage.
27. It will draw the line between legitimate and illegitimate transactions, and restore public confidence in the oil business.
28. It will give those with iron tanks, and oil, a chance to compete for honest business.
29 It will regulate production and the drill, by the price paid for the product.
30. It will give an honest broker an even chance with a dishonest one.
31. It will reduce storage, by reducing the amount carried to a reality.
32. It will make business? Business!
33. It will prevent the "roller," with no capital, from taking the helm.
34. It will terminate options in absolute transactions.
35. It will enable one to judge of the situation by its legitimate factors.
36. It will make the execution of an order an actual purchase or sale.
37. It will put more certificates in circulation, thus lightening the load.
38. It will permit petroleum to take its just rank with commodities of no less commercial importance, and remove it from the unjust classification with bankrupt stocks.
39. It will harmonize the different branches of business.
40. It will make the interest of the broker and principal harmonious.
51. It will preserve and purify the legitimate features, and exterminate the corrupt practices of the trade, without interfering with any honest right.

In presenting this rule, with a list of the principal changes it will bring about, we are fully aware that the whole field is not canvassed, and that many other possible, probable and even positive changes will be brought about, each in its way for the better protection of the trade and inuring to your benefit. We can but briefly present the text for your study.

We believe you have the means at your command to bring about these much needed changes. You have tolerated, if not encouraged, the abuses that have grown to dictate to you in your business; you are daily giving aid and comfort to your enemies, and the ranks of the foe are hourly increasing by the inaction of yourselves and the apparent easy conquest your scattered front presents. Your organization now represents by far the greater part of the petroleum fields; your list of membership contains the bone and sinew of the industry. You are they that have made the oil business the occupation of a lifetime, not the diversion of an hour, or the medium of a gambling play. Your names are seen in all branches of the trade. You are each responsible for the situation you to-day find yourselves in, and you are worthy of no better estate if you do not present a bold, united front, demanding a remedy for your grievances; resting, not so long as your business is made the foundation of so gross a farce.

Respectfully,

J. A. Cadwallader,
H. B. Porter,
M. W. Quick,
Committee.

JULY OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN JULY, 1884.

Allegany Field.

Scio.

Lot. Owner.	Barrels.
McAllister (farm), Hostetter & Co No 3	6
Wells	1
Production	6
Dry	0

Alma.

3, M J McMullen No 8	10
18, H L McMullan No 10	12
19, Rumsey & Lovell No 3	10
38, Perrin & Young, No 12	12
38, do No 13	8
64, Leasure & Co	dry
68, O L Mather & Co	6
105, Hall & Co	dry
106, Howard, O'Connor & Shanley No 3	10
110, Straight & Hostetter No 2	3
139, Anderson & Co	8
142, Willetts & Duke	8
142, H. M. Harkness	8
Wells	13
Production	93
Dry	2

Wirt.

52, Coast Oil Co	dry
52, Nicaraugua Oil Co	dry
Wells	2
Production	0
Dry	2

Bolivar.

5, Star Oil Co No 3	10
8, Empire Gas Co	10
15, Kelly & McMurray No 3	8
15, Sawyer & Co	10
15, Boggs, No 8	6
15, John Benninger	10
24, J O Johnston No 2	10
Wells	7
Production	64

Clarksville.

9, P T Kennedy No 3	6
10, Angell Oil Co	10
10, C W Scofield No 9	12
Carnahan, National Transit Co	2
Wells	4
Production	30
Dry	0

Genesee.

73, C W Scofield No 6	12
Wells	1
Production	12

Bradford Field.

East and West Branches.

Farm. Operator.	Barrels.
Hinchey, S W McMurray & Co No 3	6
Hooker, Chapin & Chapman No 2	8
Dent, Whitney & Wheeler No 41	10
Clark, Clark & Owens No 6	6
Lovejoy, Willoughby & Thayer No 8	5
Taylor, Atlas Oil Co No 13	12
Fox, Caldwell, Hamsher & Co No 9	10
Inglesby, P T & W C Kennedy No 3	7
Herrick, Springer &Co No 5	8

Quintuple.

139, M J Seymour	10
Wells	10
Production	82
Dry	0

Kendall Creek.

Moore, Anchor Oil Co No 16	10
Bingham (lot 77) B F Brinton & Co No 9	8
Fisher, Larabee & Wheedon	8
Wells	3
Production	26

Four Mile.

Van Campen, Wm M Brown	10
Widow Carrol, Thomas Kervin No 8	8
Stevens, Coast & Curtis	8
Firkel, Franchot Brothers No 8	10
Wells	4
Production	36

Indian Creek.

Spiller, Wm H Spiller	gas
Winchell, White & Young	6
Campbell, Golden & Co	8
Heighsle, Dr W L Crissman No 3	8
Wells	4
Production	22
Dry	1

Cole Creek.

Bingham, lot 575, Union Oil Co (Forman agt) No 8	50
do lot 574, Hamlin & Rose No 2	30
do lot 574, do No 3	20
do lot 580, John McKeown No 8	40
do lot 580, do No 9	40
do lot 580, do No 10	15
do lot 580, do No 11	40
Wells	7
Production	235

Kinzua.

Bingham, Union Oil Co No 54	40
do lot 129, P T & W C Kennedy No 5	10

Kinzua Village.

Warrant 2590, H A Jamieson & Co	dry
Wells	3
Production	50
Dry	1

Warren and Forest.

Glade and other Towns.

Tract. Owner.	Barrels.
Wardwell, Benedict & Robinson No 10	10
Stewart, Wesley Chambers No 4	40
Frost do	dry
Storum, Pickett & Stone	6
Lacey, Bradley & McDonald No 2	5
Schermerhorn, Kerns & Smith	dry
Asylum (North Warren), Sanford & Jamieson	5
Pleasant (twp), lot 520, Story & Adams	dry
Mead (twp), lot 461 Otis Hoffman	50
Elliott (Chambers), Anchor Oil Co No 5	150
Galloway, do No 6	500
Cobham, Johnson & Galloway No 7	125
do do No 8	500
J L McWilliams, Hays, Gartlan & Co No 1	200
do do Nos 2 & 3	1600
do do No 9	225
Island, do No 1	50
do do No 2	50
A McWilliams, Pickett & Stone, No 2	10
do do No 3	125
do do No 5	90
J L McWilliams, Reid & Brown 5 wells	900
do McWillams Bros	175
do Staley, Ross & Co No 1	250
do do No 2	300
do do No 3	250
do Greenlee & Russell No 2	25
Hook, Adams, Story & Co	175
Nelson, Grace & Co No 1	125
do do No 2	200
Sam Hook, (Thos Kervin) Beatty & Pickett	85
C B Willie, Odell & Miller No 1	450
Hook, Smith, Bright & Co No 1	125
Rollin, Calhoun & Co No 1	dry
C Hook, do No 2 est	10
Rogers Island, Wesley Chambers & Galloway No 1	130
Rogers, Barnsdall Bros & Co No 1	175
do do No 2	150
Wells	43
Production	7266
Dry	4

Clarendon.

36, Borchert & Conklin No 6	6
464, Logan & Cramer	3
464, M B McManus No 5	5
108, Hackett & Shirley	6
526, F G Keatley No 6	8
529, Beecher & Copeland	5
530, H B Porter No 11	8
561, F H Rockwell & Co No 8	8
583, do do No 11	5
582, H G Lapham No 3	8
582, do No 4	8
582, do No 5	8
531, C A & D Cornen No 4	5
556, do No 11	5
591, Clark, Foster & Co No 4	8
557, R E Townsend & Co	6
Wells	16
Production	102

Tiona.

104, Armor & Co No 1	5
109, J S Patterson No 29	8
109, do No 30	6
160, Conley, Pagett & Co No 7	8
164, Hill & Powell No 3	8
204, Emerson & Farnsworth No 3	5
204, A G Aiken & Co	5
Wells	7
Production	45

Cooper District.

370, Horton, Crary & Co	gas
439, McCalmont Oil Co No 22	15
407, Cochran Brothers No 6	20
407, do No 7	20
407, do No 9	18
407, Shank & Stewart No 4	20
438, Shank & Emery No 14	40
438, do No 22	15
Cooper tract, M W S & Co No 38	8
do Clark & Foster No 7	10
Wells	10
Production	126
Dry	1

Balltown.

3194, Porcupine Oil Co No 25	100
3194, do do No 26	100
3194, do do No 27	25
3195, Agnew, Emery & Co No 2	100
3195, do do No 3	125
3195, Clark & Foster	dry
3195, J A Gartlan No 3	25
5236, May, Kelly & Grandin No 27	100
Wells	8
Production	575
Dry	1

Miscellaneous.

Warrant 3174 (lot 49), Goettel Bros & Hughes	dry
do 3672, Johnson & Murphy	dry
do 3668, M Murphy & Co	dry
Lot 739 (Cherry Grove) Beecher & Co	dry
Warrant 5224 (Limestone twp), Hunter & McBride	dry
Elk Co (warrant 3784), Johnson, Gillmor & Co	dry
Wells	6
Production	0
Dry	6

Lower Country.

Venango.

Farm. Operator.	Barrels.
Diamond, Loots & Co	12
Tract 67, J B Smithman	10
Epley, Lee & Co	dry
J Shiner, A P Dale	dry
Echols, Judd & Kiser	6
Mt Hope, Galbraith & Co	35
Clintonville, Dean & Phillips (gas)	dry

Vicinity Emlenton.

Black, Crawford & Black	7
Smith, C Weible	6
Graham, J J Nelson	4
Curry, Curry & Co	10
McCullough, Porterfield & McCombs	6
do W Weaver	40
do Horning, Klingler & Co	4
Leslie, Dutton & Co	7
Middleton, Wm Forster	10
J McGinniss McGinniss	8
Wells	17
Production	163
Dry	3

Clarion.

Lehigh, Lehigh Oil Co	5
Clarion, Clarion Gas Co	dry
Wells	2
Production	5
Dry	1

Butler and Armstrong.

Wallace, Fisher Bros No 7	50
do do No 8	75
McCalmont, Phillips Bros No 11	15
do do No 12	12
McCandless, do	10
Green or Dorsey, do	dry

Hazlett, Campbell, Gibson & Co 20
Renfrew, A Shidemantle. 50
Hammel, Forest Oil Co 50
Marshal, S Armstrong & Co 160
Criswell, Wm Reed . . . . . dry
Wheat, Phillips Bros . . . . . dry
Mulligan, McGuire & Co No 3. 12
do Pipe Liners 8
Kesselman, Reed & Sutton 45
Reep, Westerman & Co 10
Bauers, P A Rattigan . . . . . dry
Barkeyville, B F Hamilton . . . . . dry
Six Points, W C Vance . . . . . dry
Robinson (Byrom) Daugherty & Co 5

Wells 20
Production. 522
Dry 6

DRILLING WELLS, RIGS UP AND BUILDING AUG. 1.

Allegany Field.

Scio.

Lot.	Owner.	Depth.
2,	Coast Oil Co No 31 (old)	rig
2,	Pennell Bros No 4 (old)	rig
3,	Coyle & Co (old)	rig
4,	Jas McEnroe No 3.	1100
4,	do No 4 (old)	rig
11,	Thompson & Vesey No 4 (old)	rig
11,	Lowcomer & Turner (old)	rig
12,	Allen & Morse (old)	rig
12,	Griffin & Co No 7 (old)	rig
12,	do No 10 (old)	rig
50,	The Union Oil Co No 8 (old)	rig
50,	do do No 9 (old)	rig
L Morton farm,	A J Applebee No 3 (old)	rig

New rigs 0
Old rigs 12
Drilling 1
Total. 13

Alma.

1,	Phillips Bros No 14 (shut down)	300
1,	do No 15 (old)	rig
23,	Vance & Horton (old)	3 rigs
24,	New Milford Oil Co (old)	2 rigs
24,	W F Jones (old)	rig
24,	Sutherland & Co No 5 (old)	rig
31,	J H Thornton.	600
38,	Perrin & Young No 15 (old)	rig
46,	Last Chance Oil Co (old)	rig
51,	Sawyer & Co (old)	rig
88,	Duke & Co (old)	rig
91,	Torrey & Jones (old)	rig
142,	Dean & Smith No 5 (old)	rig

New rigs 0
Old rigs 14
Wells drilling 2
Total 16

Wirt.

14,	Lester & Co. (old)	rig
13,	John Moran (old)	rig
33,	Miner, Wellman & Fuller (old)	rig
43,	(Wilcox farm) AlleganyGasCo (old)	rig
61,	Muldoon Oil Co . . . . . (old)	rig
1,	George McCoy No 2	1300
1,	do No 3	rig
1,	Early Bros.	300
	Lattimer & Stearns (old)	rig
Brown (farm)	Riley Smith	drilling
Phillips (farm),	Ostrander	100

New rigs 1
Old rigs. 6
Wells drilling 4
Total 11

Bolivar.

6,	I Collins (old)	rig
7,	W & J Duke No 16 (old)	rig
7,	Coast Oil Co No 20 (old)	rig
7,	do No 42 (old)	rig
7,	do No 45 (old)	rig
7,	A A Hopkins No 16	500
15.	Fay (old)	rig
15,	Kelly & McMurray No 4	800
15,	do	rig bldg
15,	Sawyer & Co No 12 (old)	rig
15,	John Benninger	drilling
15,	do (old)	rig
23,	F C Streeter & Co No 5.	rig
23,	do do No 6 (old)	rig
23,	do do No 7	rig bldg
23,	Irvin & Morgan No 3	900
30,	Fritz & Lowry No 8 (old)	rig
30,	do do No 10 (old)	rig
31,	Smith & Co No 10 (old)	rig
31,	Hydrick & Co No 5	100
31,	do No 6	rig bldg
Wetherby S,	Empire Gas Co.	500
do	do	2 rigs

New rigs 5
Old rigs 13
Drilling 6
Total 24

Clarksville.

9,	Heuston & Brecht No 4 (old)	rig
9,	H C Werthman (old)	rig
9,	Merritt (old).	rig
12,	Cuba Gas Co (old)	rig

New rigs 0
Old rigs 4
Wells drilling 0
Total 4

Genesee.

8,	I Willets (old)	rig
8,	do (old)	rig
14,	C W Scofield No 9 (old)	rig
14,	Merwin (old)	rig
21.	Empire Gas Co No 3 (old)	rig
22,	I Willets No 13 (old)	rig
22,	do No 14 (old)	rig
22,	do No 15 (old)	rig
22,	do (old)	rig
23,	Hughes & Coughlin (old)	rig
23,	Emery Oil Co No 16 (old)	rig
23,	do do No 17 (old)	rig
Champlain,	Emery Oil Co No 8 (old)	rig
29,	William Cranston (old)	rig
31,	H L McMullan & Co (old)	rig
38,	S E Young (old)	rig
38.	Empire Gas Co (old)	rig

New rigs 0
Old rigs 17
Drilling 0
Total. 17

Miscellaneous.

Wellsville,	Palmeter & Co	400
Towanda,	C M Carroll & Co	drilling
Gains,	Peck & Tait (old)	rig

New rigs 0
Old rigs 1
Wells drilling 2
Total 3

Bradford Field.

East and West Branches.

Farm.	Operator.	Depth.
Hinchey,	S W McMurray & Co No 4	rig
Paton,	McClure & Co (old)	rig
Clark,	McCray Bros (old).	rig
Willis,	do No 29 (producing)	550
Whittaker,	F W Davis No 2	300
Glass,	Barnsdall Bros (old)	rig
Bingham,	G H Van Vleck, No 31 (shut down)	sand
do	lot 186, R J Straight No 3(old)	rig
Dent,	P C L & P Co No 64 (old)	rig
do	do do No 65 (old)	rig
do	Whitney & Wheeler No 41 (old)	rig
Mill lot,	Whitney & Wheeler No 9 (old)	rig
Crooker,	Jennings & Curtis No 10 (old)	rig
Lovejoy,	Willoughby & Thayer No 5	300
Inglesby,	P T & W C Kennedy No 4	rig
Paul,	Bayne, Fuller & Melvin No 5(old)	rig
Wilson,	West Branch Oil Co (old)	rig
Sugar Run,	W H D Chapin (old)	rig
Cary,	Duncan No 4 (old)	300
Mack,	Fisher Brothers No 19 (old)	rig

Quintuple.

25,	E Strong & Co No 2 (old)	rig
44,	J W Humphrey (old)	rig
174,	D Atwater & Co	drilling
220,	Clark & Stearns (old)	rig
283,	Newell	1000

New rigs 2
Old rigs 17
Drilling 6
Total 25

Kendall Creek.

Moore,	Watson & Curtis No 5 (old)	rig
Melvin,	P C L & P Co No 85 (old)	rig
do	do do No 86 (old)	rig
do	dr do No 87 (old)	rig
Borden,	Urquhart & Lavens (old)	rig
Norton,	Dan Clark No 3 (old)	rig
do	do do No 4 (old).	rig
Irons,	Carter (old)	rig
Dodge,	Dodge & Carter (old)	2 rigs
Mack,	J A Logan & Seekins	drilling
Willets,	I Willets (old).	rig
Bingham,	Short & Co	drilling

New rigs 0
Old rigs 11
Drilling 2
Total 13

Foster Brook.

E T Co,	Boyne, Penny & Coleman No 11 (old)	rig
do	F L Blackmarr & Post No 5(old)	rig
do	R W Evans (old)	rig
C B & H,	Watson Oil Co No 33 (old)	rig
do	do do No 34 (old)	rig
do	Josett Brothers No 6	1500
do	Juter & Yager (old)	rig

New rigs . . . . . –
Old rigs 6
Well drilling 1
Total 7

Four Mile.

Van Campen	Wm M Brown (old)	rig
do	J Harriott (old)	2 rigs
do	Adams, Carson & Co(old)	rig
do	Merrill & Perrin (old)	rig
do	Geo Van Campen & Sons No 21 (old)	rig
do	Geo Van Campen & Sons No 22 (old)	rig
do	Cleveland Oil Co No 5 (old)	rig
do	do do No 6 (old)	rig
do	Wm Doe No 4 (old)	rig
do	do No 5 (old)	rig
Waters,	Griffin & Howard No 2 (old)	rig
C B & H,	Smith & Wright (old)	rig
Widow Carrol,	Thomas Kervin No 9 (old)	rig
do	do No 10 (old)	rig
do	Malloch & Griswold (old)	rig
Stevens,	William Burns	1000
do	J H Hughes	800
Stevens,	Coast & Curtis (old)	rig
Johnson,	Hayes & Son	800

New rigs 0
Old rigs 17
Drilling. 3
Total. 20

Indian Creek.

Barse,	U O Co (G V Forman agent) No 36	drilling
North Branch,	J D Downing & Co (old)	rig
do	do do (old)	rig
Keating,	Forest Oil Co No 47 (old)	rig
Hamlin,	Miller & Odell No 4 (old)	rig
Dodge,	Shear Bros No 8	500
Zimmer,	Shear Bros No 2 (old)	rig
do	do No 3 (old)	rig
Keating,	J L McKinney & Co No 34	sand
Morse,	Morse & Brown (old)	rig
Heighsle,	Dr W L Crissman No 4	sand
Miles Loop,	Union Oil Co No 25 (old)	rig
Keyes,	Dan'l Keyes	rig
Swink,	L E Mallory	rig

New rigs 2
Old rigs 8
Drilling 4
Total 14

Cole Creek.

Rew,	Capt E Frawley (old)	rig
Bingham,	lot 579 Union Oil Co (Forman agt) No 9	drilling
do	lot 536 Union Oil Co (Forman agt) (old)	rig
do	lot 550 Union Oil Co (Forman agt) (old)	rig
do	lot 574 Hamlin & Rose No 4	700
do	lot 580 John McKeown No 12	1850
do	lot 580 do No 13	1300
do	lot 580 do No 14	rig

New rigs 2
Old rigs 3
Drilling 3
Total 8

Kinzua.

Lot 5,	John J Carter	sand
Bingham,	Union Oil Co No 56 (old)	rig
do	(C P & H pur) Emery Oil Co No 40 (old)	rig
do	lot 136 P T & W C Kennedy No 3 (fishing)	1600
Ormsby,	Higgins & Co	1000
Lafayette,	Barnsdall Bros	600

Kinzua Village.

Warrant 5556, Schoonover & VanVleck	100
U O Co, Dr E A Van Scoy (old) . . .	rig
Dew Drop lease, McElree & Tucker .	700

New rigs 0
Old rigs 3
Drilling 6
Total 9

Warren and Forest.

Glade and Other Towns.

Tract. Operator.	Depth.
Wardwell, Benedict & Robinson No 12 (old)	rig
Cobham, Union Oil Co No 13 (old) . .	rig
do do do No 18 (shut down)	200
Foster, Wesley Chambers No 1 (old) .	rig
Elliott, E T Johnson & Co No 2 (old)	rig
Kirwin, Clark & Foster (old)	rig
Irvine, T J Melvin No 4 (old)	rig
John Sweating, J A Magee (old) . . .	rig
Elk twp 5576, Calhoun&Co (shut down)	sand
Owens (North Warren), P T Campbell & Co . . .	drilling
Amann do Wilson Law..	drilling
Morgenradt, Unknown	drilling
Gartlan pur, Anchor Oil Co No 2 (shut down)	200
do do No 3 (old)	rig
Clark, Anchor Oil Co No 3 (old) . . .	rig
do do No 4 (old)	rig
Copeland, Beecher & Copeland	rig
H M Smith, J R Johnson.	sand
Bowers, Union Oil Co	rig bldg
Chambers' pur, Anchor Oil Co	rig bldg
Cobham, The Pooled Companies No 9	sand
do do do No 10	1000
do do do No 11	600
do do do No 12	600
do do do No 13	200
do do do No 14	100
do do do No 15	800
do do do No 16	100
J L McWilliams, Hayes, Gartlan & Co No 4	sand
do do No 5	800
do do No 6	600
do do No 7	600
do do No 8	500
Cummings Island, Fred Hayes & Co No 3	sand
do do No 4	rig
A McWilliams, Pickett & Stone No 1 (old)	rig
do do No 4	1000
do do No 6	800
do do No 7	200
do do No 8	rig
do Roth & Markham No 2	700
do do No 3	600
J L McWilliams Reid & Brown No 6 .	rig bldg
do Miller & Odell No 2 .	drilling
do Greenlee&Russell No 1	sand
do Windsor Brothers . .	sand
Village lot Fred Hue & Co	sand
do Dimmick, Pratt & Co . . .	sand
do W W Ballard	rig
Railroad, Borchert & Smith No 2 . . .	sand
do do No 3 . . .	600
Rogers Island, Chambers & Galloway No 2	500
do do No 3	400
do do No 4	rig
Rogers (Brown pur), Anchor Oil Co No 2	500
do do do No 3	400
do Book & Gartlan No 1	drilling
do do No 2	drilling
do do No 3	drilling
do do No 4	rig bldg
do do No 5	rig
do Barnsdall Bros No 3	drilling
do do No 4	rig
do do No 5	drilling
Lot 502, Adams, Story & Sargent . . .	drilling
Lot 461, O Hoffman No 2	rig
Eldred, Reid & Brown	drilling

New rigs 12
Old rigs 11
Drilling 44
Total 67

Clarendon.

Lot. Operator.	Depth.
35, (Mooney farm) Bell No 2 (old) . .	rig
54, D Beatty & Son No 36 (old) . . .	rig
78. do do (old)	2 rigs
466, Stoneham Oil Co No 3 (old)	rig
466, D Riddlesperger (old)	rig
464, Columbia Oil Co No 17 (old) . . .	rig
465, W Benedict No 12 (old)	rig
465, Wm Pagett No 2 (old)	rig
106, Golden & Co (old)	rig
107, Fay & Lawton No 14 (old)	rig
107, do do No 15 (old)	rig
108, C H Filkins (old)	rig
495, W W Ballard No 4 (old)	rig
494, Patterson & Solliday No 10	500
526, F G Keatley No 6	400
529, J C Goal No 3 (old)	rig
528, Beckner & Co (old)	rig
583, F H Rockwell & Co No 12	sand
561, do do do No 13	rig
583, do do do No 14	rig
582, H G Lapham No 6	rig
591, Clark & Foster & Co No 5	500
590, do No 1	300
530, A R Leake & Co No 5.	100

New rigs 3
Old rigs 16
Drilling 6
Total 25

Tiona.

Lot. Operator.	Depth.
75, Fertig & Henne (shut down) . . .	sand
159, do (shut down) . . .	sand
83 do	rig
109, J S Patterson No 31 (old)	rig
109, Schonblom & Townsend No 8 (old)	rig
110, Fertig & Henne (old)	2 rigs
161, Helm & Mealey (old)	rig
164, do (old)	rig
164, Hill & Powell No 4 (old)	rig
165, C H Coffin & Co No 2 (old)	rig
204, Emerson & Farnsworth No 4 . . .	750

New rigs 1
Old rigs and shut down. 10
Drilling 1
Total 12

Cooper District.

Tract. Operator.	Depth.
395, Horton, Crary & Co	rig
Lot 438, Shank & Emery No 23 (old) . .	rig

New rigs 1
Old rigs 1
Drilling 0
Total 2

Balltown.

Lot. Operator.	Depth.
3194, Porcupine Oil Co No 21 (old) . .	rig
3194, do No 28	drilling
3194, do No 29	rig
3195, Emery, Agnew & Co No 4	600
3195, do No 5	300
3195, do No 6	rig hldg
3195, J A Gartlan No 4	600
4821, Balltown Oil Co No 24 (old) . . .	rig
4792, Howe Oil Co No 16 (old)	rig
4792, do do No 17 (old)	rig
5236, May, Kelly & Grandin No 28 (shut down)	sand
5236, do do No 29 . .	rig

New rigs 3
Old rigs. 4
Drilling 5
Total 12

Miscellaneous.

Scott Run, C A Campbell.	sand
Warrant 3561, Frost & Co . . .	sand
do 3561, W E Hess (old)	rig
do 3646, Palmer & Butts	drilling
do 3571, Crabtree & Davis (old)	rig
Warrant 5224, Hunter & McBride . . .	sand
do 5228, Vandergrift.	drilling
do 5223, do	rig

New rigs 1
Old rigs 2
Drilling 5
Total 8

Lower Country

Venango.

Farm. Operator.	Depth.
Sands, J B. Smithman	750
Mt Pleasant, Unknown	700
Raymilton, McCalmont Oil Co	sand

Vicinity Emlenton.

McCullough, Curry & Co	650
do Messer & Co	150
McCullough, Porterfield & McCombs (old)	rig
Fox, J Martin (old)	rig
Richey, E Crawford & Sons (old) . .	rig
Leslie, Stevens & Co (old)	rig
L Sloan, J Martin	750
B McGinniss, Harrington Bros	800
Middleton, Wm Forster	150
J McGinnis, McGinnis & Williams . . .	100
Goodrich, E Goodrich (old)	rig

New Rigs 0
Old Rigs 5
Wells drilling 9
Total 14

Clarion.

Bauner, Bauner Oil Co	sand
M Best, Mary Eagan.	sand
Fullerton, Edwards & Co	600

New rigs 0
Old rigs 0
Wells drilling 3
Total 3

Butler and Armstrong.

Wallace, Fisher Bros (old)	rig
Barkley, Phillips Bros	250
Wallace, do	rig
Crow, Christy	rig
Kirkpatrick, Baldridge Oil Co	150
Henderson, Johnson Bros	200
Ribolds, J J Painter (old)	rig
Butler, Manufacturers' Gas Co.	100
Shaffner, Wm Reed	1000
F Coch, do (old)	rig
C Hinchberger do	rig
F Shaffner, do	rig
M Brown, do	rig
McCray, McCalmont Oil Co	1000
Muenster, Phillips Bros No 2	1300
do do do No 3	1500
Mulligan, McGuire & Co No 4	1250
Zang, Dennison & Co No 4	1600
do do No 5	rig
Ritzert, Showalter Bros & Hartman . .	rig bldg
Martin, J C Widger	drilling
Kamerer, Hunter & Cummings	sand
Diler, W S Williams (old)	rig
Turner, W J McKee	1500
Davis, Hays & Maxwell	1200
Kelley. Hooks Bros	900
do Edmonds & Co	1100
Seybert, Seybert Bros	1500

New Rigs 7
Old Rigs 4
Wells drilling 17
Total 28

THE Bradford Oil Exchange voted against prohibiting the use of private wires by members who chose to incur the expense. Mr. C. P. Stevenson is the only member who has private telegraphic facilities at the present time.

THE drill is demonstrating that an east and west belt will not do for Macksburg.

THE National Transit Co. are building 24 iron tanks in the vicinity of Olean.

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	July 26, 1884. Barrels.	June 21, 1884. Barrels.
London	255,570	252,943
Trieste	75,163	51,515
Seven Continental Ports	1,881,042	1,790,119
Total Stocks afloat and ashore	2,211,775	2,094,577
Increase in Stocks since June 21	117,198	

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS JULY 26, 1884.

	Stocks W'k end'g July 26.		Stocks Afloat W'k end'g July 26.		Unloading W'k end'g July 26.		Grand Total Stocks Afloat & Unloading.		Receipts. From July 1, 1884.		Shipments From July 1, 1884.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	419,557	236,513	41,019	16,557	30,000	2,500	490,576	255,570	65,752	32,777	21,551	27,764
Trieste	15,187	38,289	19,990	29,374	23,000	7,500	58,177	75,163	. . .	. . .	2,237	2,677
Bremen	951,344	922,580	23,525	7,711	22,500	. . .	997,369	930,291	87,197	162,301	30,480	36,302
Hamburg	352,779	274,529	62,158	30,948	35,000	77,000	449,937	382,477	85,339	143,888	65,667	41,904
Antwerp	257,856	179,301	23,939	22,738	46,000	74,700	327,795	276,739	90,918	93,922	43,440	40,411
Rotterdam	79,948	70,934	5,391	11,926	9,000	4,000	94,339	86,860	15,647	17,378	9,835	8,816
Amsterdam	64,458	55,882	12,743	1,238	15,000	13,700	92,201	70,820	39,253	23,968	11,643	11,093
Stettin	70,225	59,996	16,163	40,273	24,300	12,900	110,688	113,169	10,920	27,231	9,066	8,853
Danzig	14,459	12,122	. . .	8,564	. . .	. . .	14,459	20,686	2,022	4,937	1,500	1,274
Total	1,791,069	1,575,344	143,919	123,398	151,800	182,300	2,086,788	1,881,042	331,296	473,625	171,631	148,653

	1881.	1882.	1883.	1884.
Total stocks exclusive Trieste	1,234,656	1,850,153	2,210,626	1,811,857
Total afloat, exclusive Trieste	168,278	324,435	184,938	139,955
Total unloading, exclusive Danzig, London and Trieste	371,200	299,500	181,800	184,800
Total	1,774,134	2,474,088	2,577,364	2,136,612
Afloat and unloading for direct Continental Ports	46,000	. . . .	. . . .	20,000
" " " Baltic Sea, exclusive Stettin and Danzig	91,000	29,600	20,200	7,900
" " " English harbors, exclusive London	127,000	34,800	115,700	53,000
Grand Total	2,038,134	2,538,488	2,713,264	2,217,512

CRUDE QUOTATIONS FOR JULY, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Bradford. Highest.	Bradford. Lowest.	Bradford. Closed.	Oil City. Opened.	Oil City. Highest.	Oil City. Lowest.	Oil City. Closed.	New York. Opened.	New York. Highest.	New York. Lowest.	New York. Closed.	Pittsburgh. Opened.	Pittsburgh. Highest.	Pittsburgh. Lowest.	Pittsburgh. Closed.
T	1	59¾	59¾	57½	59⅛	59½	59⅞	57¾	59⅜	59½	59½	57½	59¼	59½	59½	57⅝	59⅜
W	2	59¾	61½	59¾	61	59½	61¾	59½	61	60	61½	59¾	61⅛	59½	61⅝	59½	61¼
T	3	61	62⅝	60⅛	61⅞	62½	62½	60½	61⅞	61⅛	62⅝	60¼	61⅞	61½	62⅝	60⅜	62
F	4	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
S	5	. .	. .	. .	. .	61¼	62¼	61¼	62	. .	. .	. .	. .	. .	. .	. .	. .
M	7	62	62¼	59¾	59¾	62⅛	62⅜	59⅝	59⅝	62	62¼	59⅝	59⅝	62	62⅜	59¾	59⅞
T	8	59¼	60	58⅜	59⅞	59½	59⅞	58⅜	59⅞	59½	60	58½	60	59¼	60	58⅜	60
W	9	60	61⅜	59	60½	60	61⅜	59⅛	60¾	60¼	61⅜	59⅛	61	60⅛	61½	59	60¾
T	10	60¾	61⅜	59¾	59¾	60⅜	61⅜	59⅞	60	60¾	61⅜	60	60	60⅝	61⅜	59⅞	60
F	11	60	61⅜	59½	60⅞	60¼	61⅜	59¾	61	59⅞	61½	59¾	60⅞	60	61¾	59¾	61
S	12	60¾	60¾	60	60⅛	60½	60¾	60¼	60¼	61	61	60⅛	60⅛	60½	60¾	60⅛	60⅛
M	14	60	60⅜	60	60⅛	60	60½	59½	60	59⅞	60⅜	59½	60	60	60½	59½	60
T	15	60½	65⅞	60½	62½	61	66¼	60⅞	62¼	60⅛	66¾	60⅛	62¾	60½	66¼	60½	62¾
W	16	62¾	64¾	62⅜	64¾	62½	65	52⅜	64⅞	63	64⅝	62¼	64⅜	62¾	65	62¼	64⅞
T	17	64¼	65⅝	63⅞	64⅞	63½	65⅝	63½	65	63¾	65⅝	63¾	65	64	65¾	64	65
F	18	64¾	64⅞	63½	63⅝	64¾	64⅞	63⅜	63½	65	65	63½	63½	64⅞	64⅞	63⅜	63½
S	19	63½	63½	62¼	62⅞	63	63⅜	62¼	63	63	63⅜	62	63	63	63¼	62¼	62⅞
M	21	63	63½	62⅜	62⅝	63	63½	62⅛	62⅝	63⅛	63½	62⅝	62⅝	62¾	63⅜	62⅝	62⅝
T	22	61⅞	65	61⅝	65	62	65⅜	61⅝	65	62½	65⅛	61⅝	65⅛	62	65	61½	65
W	23	65	66	64	64⅜	65	65⅝	64	64½	65	66	64⅛	64⅜	64¾	65⅞	54⅛	64½
T	24	64	65	64	64⅞	64	65⅛	63¾	64⅞	64¼	65	64	64⅞	64	65	64	65
F	25	65¼	65⅞	64⅞	65⅜	64⅝	65⅞	64½	65¼	64½	65⅞	64½	65½	64¾	65¾	64¾	65½
S	26	65⅜	65⅝	63¾	63⅞	65	65¾	63⅞	63⅞	65¼	65⅝	63¾	63¾	65⅛	65⅜	63⅞	63⅞
M	28	63¾	68¼	63½	67¾	63¾	68⅛	63½	68⅛	63½	68⅛	63¼	67¾	63¾	68	63⅝	68
T	29	67⅞	72⅝	67⅞	72⅜	68½	72¾	68¼	72¼	68	72⅞	68	72	68¾	72¾	68½	72¼
W	30	71¾	72	69⅞	69⅞	71½	72⅛	70	70⅛	71½	72	70⅛	70⅛	71¾	72	70⅛	70¼
T	31	69⅞	75	69⅞	73⅜	69¾	75	69⅝	73⅜	69⅞	75	69¾	73½	69⅞	75	69⅞	73⅜

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	June, 1884. Wells.	June, 1884. Prod'n.	June, 1884. Dry.	July, 1884. Wells.	July, 1884. Prod'n.	July, 1884. Dry.
Scio	5	36	1	1	6	0
Alma	15	127	0	13	93	2
Wirt	4	26	1	2	0	2
Bolivar	12	112	0	7	64	0
Clarksville	12	98	1	4	30	0
Genesee	5	38	0	1	12	0
Miscellaneous	2	5	1	0	0	0
Total	55	442	4	28	205	4

BRADFORD FIELD.

Division of Field.	June. Wells.	June. Prod'n.	June. Dry.	July. Wells.	July. Prod'n.	July. Dry.
E. & W. Branches	25	172	2	10	82	0
Kendall Creek	8	65	0	3	26	0
Foster Brook	11	108	0	0	0	0
Four Mile	10	86	0	4	36	0
Indian&Meeks Cr'ks	7	58	1	4	22	1
Cole Creek	8	300	0	7	235	0
Kinzua	7	96	1	3	50	1
Total	76	885	4	31	451	2

WARREN AND FOREST.

Dirtrict.	June. Wells.	June. Prod'n.	June. Dry.	July. Wells.	July. Prod'n.	July. Dry.
Glade	27	1470	7	43	7266	4
Clarendon	32	195	1	16	102	0
Tiona	9	54	0	7	45	0
Cooper	19	348	5	10	126	1
Balltown	7	500	0	8	575	1
Miscellaneous	1	0	1	6	0	6
Total	95	2567	14	90	8114	12

LOWER COUNTRY.

District.	JUNE. Wells.	Prod'n.	Dry.	JULY. Wells.	Prod'n.	Dry.
Venango	28	180	5	17	163	3
Clarion	2	5	.	2	5	1
Butler and Armstrong	12	296	1	20	522	6
Total	42	481	6	39	690	10

GRAND SUMMARY.

District.	JUNE. Wells.	Prod'u.	Dry.	JULY. Wells.	Prod'n.	Dry.
Allegany	55	442	4	28	205	4
Bradford	76	885	4	31	451	2
Warren and Forest	95	2567	14	90	8114	12
Lower Field	42	481	6	39	690	10
June Total	268	4735	28	188	9460	28
July Total	188	9460	28			
Difference	80	5085	0			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	JULY 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	2	11	1	14	0	12	1	13
Alma	4	12	14	30	0	14	2	16
Wirt	2	3	5	10	1	6	4	11
Bolivar	7	11	6	24	5	13	6	24
Clarksville	3	2	2	7	0	4	0	4
Genesee	0	16	2	18	0	17	0	17
Miscellaneous	0	2	1	3	0	1	1	2
Total	18	57	31	106	6	67	14	87

BRADFORD FIELD.

Division of Field.	JULY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	2	18	13	33	2	17	6	25
Kendall Creek	3	8	3	14	0	11	2	13
Foster Brook	.	6	1	7	0	6	1	7
Four Mile	6	11	6	23	0	17	3	20
Indian Creek	3	9	4	16	2	8	4	14
Cole Creek	4	3	7	14	2	3	3	8
Kinzua	2	1	6	9	0	3	6	9
Miscellaneous	.	.	.	.	0	0	0	0
Total	20	56	40	116	6	65	25	96

WARREN AND FOREST.

Division of Field.	JULY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	7	14	13	34	12	11	44	67
Clarendon	7	13	14	34	3	16	6	25
Tiona	3	5	8	16	1	10	1	12
Cooper	1	1	9	11	1	1	0	2
Balltown	2	4	5	11	3	4	5	12
Miscellaneous	4	2	7	13	2	1	5	8
Total	24	39	56	119	22	43	61	126

LOWER COUNTRY.

Division of Field.	JULY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	4	4	17	25	0	5	9	14
Clarion	1	.	3	4	0	0	3	3
Butler & Armstrong	3	2	24	29	7	4	17	28
Total	8	6	44	58	7	9	29	45

GRAND SUMMARY.

Field.	JULY 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	18	57	31	106	6	67	14	87
Bradford	20	56	40	116	6	65	25	96
Warren & Forest	24	39	56	119	22	43	61	126
Lower Country	8	6	44	58	7	9	29	45
Total July 1	70	158	171	399	41	184	129	354
Total Aug. 1	41	184	129	354				
Difference	29	26	42	45				

JULY PRODUCTION REPORT.

Reports were received showing the amount of stocks at 6,238 Bradford wells July 1st, and 6,252 wells August 1st. The average stocks per well July 1st were 56.3 barrels. On the first of August the average per well was 54.7 barrels, a decrease per well of 1.6 barrels. The above figures are tabulated as follows:

Time.	No. Wells.	Gross Stocks.	Average per Well.
July 1, 1884	6,238	350,961	56.3
August 1, 1884	6,252	342,082	54.7
Difference	14	8,879	1.6

The number of wells in the Bradford field connected with the pipe lines August 1st is estimated at 13,310. Presuming that the wells heard from afford a fair average for the entire field, the total stocks at wells in the Bradford field were decreased during July 21,296 barrels, a daily average of 687 barrels. The daily average pipe line runs from all wells in the Bradford field during July, by the National Transit and Tidewater lines were 34,718 barrels. Subtracting the decrease in stocks, a fair estimate on Bradford's production, per day, during July, would be:

	Barrels.
Average Daily Pipe Line Runs	34,718
Average Daily Decrease of Stocks at Wells	687
Bradford's July production, est	34,031
do June do do	33,753

THE ALLEGANY FIELD.

Reports of stocks in the Allegany field are tabulated as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
July 1, 1884	1,114	45,861	41.2
August 1, 1884	1,116	46,655	41.8
Difference	2	794	.6

The 1,114 wells from which reports were received, show an increase in stocks of $\frac{6}{10}$ barrels per well. The number of producing wells in the Allegany field July 1st is estimated at 3,714, and 3,738 August 1st. From the preceding data the following statement is made:

Time.	No. Wells.	Average per Well.	Gross Stocks.
July 1, 1884	3,714	41.2	153,017
August 1, 1884	3,738	41.8	156,248
Difference	24	.6	3,231

According to these figures the total stocks at wells in the Allegany field increased 3,231 barrels during July, a daily average increase of 104 barrels. The average daily pipe line runs for the Allegany field for July were 11,114 barrels. Adding the increase in stocks makes Allegany's estimated daily production for July 11,218 barrels.

	Barrels.
Allegany's July production is estimated at	11,218
Allegany's June production is estimated at	11,108

WARREN, FOREST AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Warren, Forest and the Lower Country. The number of wells on the first of each month, with their averages, are contained in the following statement:

Field.	No. Wells. July 1.	No. Wells. Aug. 1.	Average per Well. July 1.	Average per Well Aug. 1.
Clarendon & Tiona	127	130	41	52
Cherry Grove	58	58	80	100
Cooper District	163	163	114	109
Lower Country	83	85	60	56

The pipe line runs from the Wardwell district during July were 4,177 barrels; more than twice the June average.

Accepting the outside runs as representing the production, an estimate on the yield of the field for June and July would be as follows:

Field.	June. Barrels.	July. Barrels.
Allegany	11,108	11,218
Bradford	33,753	34,031
Outside runs	19,977	20,870
Total	64,838	66,119

These estimates indicate an increase of 1,281 barrels per day over the June figures. In the above no account is taken of the "dump oil" loaded on the cars direct from the wells at Emlenton and other points along the Allegheny river.

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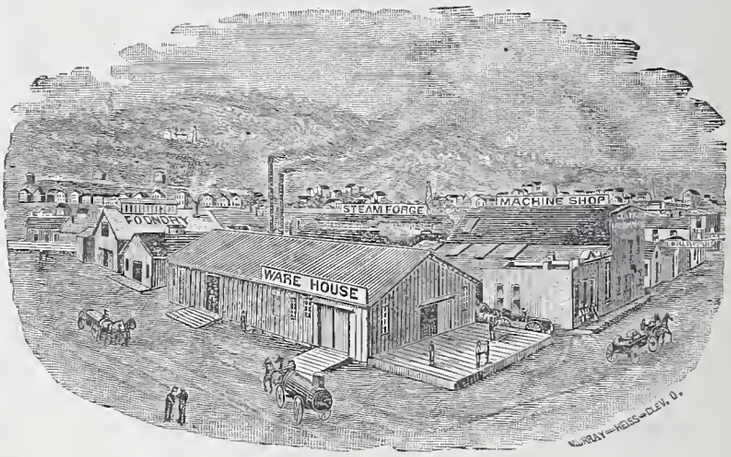

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THE PETROLEUM AGE.

Vol. III. BRADFORD, PA., SEPTEMBER, 1884. No. 8.

THE BRADFORD FOURTH SAND.

BY C. F. ALLEN.

The many anxious inquiries of well-owners as to the relative location of this stratum, have been met by such various answers that the only real solution is effected by the drill. If a well is drilled deeper and the production improved, the existence of a fourth sand is at once asserted by all interested in adjoining territory. In most cases the truth is not told, and for many reasons. In drilling, say twenty to forty feet deeper, in an old well, the constant caving of the wall often prevents any accurate knowledge of the rock, and the process of bailing and watching the volume of gas and inflow of oil, is either not followed or carelessly attended to.

In one of the lucid intervals occurring to the champion letter writer of the Tunungwant, he developed a producing sand in a well in Boyd Valley, and found his way to increased facilities in obtaining greenbacks. This sand was found seventy-eight feet below the top of the third, and for several months our greasy Butler laid aside his pen and headlight lamp and wrestled with geology. He came out ahead, and others followed his example with chequered results. The efforts of individuals to increase their production, even through the little success they published to the world, gave rise to a half-faith in the existence of the fourth sand, and induced many to drill wells deeper. Generally the drill determined a continuation of the regular or third sand, and below this slate and slate alone. In a well of fair producing qualities, a small increase of production would, in such cases, not be remarked, and the experiment would be voted a failure. And yet, it is safe to assert that the life of a well and its value, other things being identical, depend directly upon the amount of sand developed. Those who have inquired into the matter under discussion will agree in most cases to a few statements, as follows:

There is no regular fourth sand in the Bradford field.

In a large part of the field the regular third sand is over one hundred feet in depth, and contains more or less oil throughout.

Most of the wells drilled before 1880, and many since then, were drilled to not more than sixty-five feet below the top of the third sand, a fear of salt water being the usual cause for stopping short.

Where the third sand is more than fifty feet thick it is irregular below that depth.

A few examples from actual work in the vicinity of Bradford may demonstrate some of these theorems.

Well A—Drilled 85 feet in third sand and into slate.

Well B, 300 feet from Well A—Originally 45 feet in sand; drilled 48 feet deeper. Twelve feet slate found between 50 and 70 feet from top of sand. This well had been flooded by parting tubing and was without casing, although packed and tubed with inch pipe. There was absolutely no sign of life in the way of gas or lively oil; very little oil at all until 70 feet in sand, when about 12 feet of brown sand was developed, the signs being at once discernible in the flow of gas. At 93 feet slate was found again.

Well C, 300 feet from Well B—Drilled 107 feet in sand without finding slate, except as mixed with sand. Not drilled into clear slate. After shooting, in lower part only, the pieces thrown out by torpedo were either slate or sand or pieces showing both slate and sand, showing the existence of slate in thin strata in the third sand.

Wells D and E, same locality, were regular with B and C, and were not drilled into slate. All the wells showed a sudden increase of oil and gas at about 70 feet from the top of sand.

Well A found slate at less than 90 feet from the top of third sand, although very near C and D.

A gentleman operating near Knapp's Creek states that he found 107 feet of sand in all, and had drilled his wells 50 feet deeper with gratifying results.

The same may be said of wells at Dallas City and Coleville, and at Riterville, far enough from either to show the general depth of McKean sand.

In Allegany County, N. Y., the little supplementary wealth is not to be found, but in the

town of Alma a few feet of barren sand is found a yard or so above the oil-bearing rock, and the order of things is inverted. The anxious operators at the 106 well looked into each other's cavernous eyes for consolation when the slate was revealed below this upper and worthless rock. The fat man sat on a hemlock log, and even in his ignorance of oil signs, refused to be comforted with ingenious sophistry, and only unfolded upon smelling the coveted oil itself as the tools were drawn again.

The value of the sub-strata of sand could not be determined here until after the upper part had been exhausted, and the well B was a fair test of its qualities.

The information obtainable about the so-called fourth sand is not reliable, principally from the effects of inaccurate records of depths of wells. Comparison of records often shows in adjoining wells from five to fifteen feet difference, not to be admitted as possible.

COMMERCIAL USES OF PETROLEUM REFUSE.

The products of petroleum are constantly growing more numerous, and their use becoming more and more universal. That portion of the crude which was formerly earnestly hated by the producer and considered as absolutely worthless; a nuisance that only served to clog up the flowing wells, besmear the derrick floors, and furnish a thick, dirty and valueless deposit for the oil tanks, is now manufactured into a great variety of useful substances, and has acquired importance as a valuable article of commerce. The change that the sediment, or paraffine as commonly called by the producer, undergoes in its transformation to vaseline, cosmoline or petroleine, is most wonderful. But still more wonderful is the transformation of the dirty refuse of the petroleum still into the paraffine or ozocerite of commerce. An immense trade has already sprung up in this article. No fairer substance ever sprang from more unpromising parentage than the snowy, pure, opalescent wax which is evolved from the bad smelling, pitchy dregs of the petroleum still. A commercial journal thus sums up the many uses to which this remarkable substance is applied:

This comely, impressionable article with all its smooth, soft beauty, defies agents which can destroy the precious metals and eat up the hardest steel as water dissolves sugar. Sulphuric and other potent acids have no more effect on ozocerite than spring water. It is alike impervious to acid and to moisture. Its advent seems to have been a special dispensation in this age of electricity.

Every overhead electric light cable or underground conduit, or slender wire, cunningly wrapped with cotton thread; all these owe their fitness for conducting the subtle fluid to the presence of this wax. And in still more familiar forms, let us outline the utility of this substance. Every gushing school girl who sinks her white teeth into chewing gum chews this paraffine wax. Every caramel she eats contains this wax, and it is wrapped in paper saturated with the same substance, The gloss seen upon hundreds of varieties of confectionery is due to the presence of this ingredient of petroleum, used to give the articles a certain consistency, as the laundress uses starch. So that a product taken from the dirtiest, worst smelling of tars, finds its way to the millionaire's mansion an honored servitor. It aids to make possible the electric radiance that floods his rooms; or in the form of wax candles sheds a softer lustre over the scene. It polishes the floor for the feet of his guests, and it melts in their mouths in the costliest of candies. For the insulation of electric wire, paraffine wax has to-day no successful rival, and the growth of the demand for this purpose keeps pace with the marvelous growth of the electric lighting system. A single Chicago firm buys paraffine wax by the car load. Its price is but half that of beeswax, and yet the older wax yields readily to sulphuric or other acid, this being a test for the presence of beeswax in paraffine. The demand for paraffine for candles yet heads the list.

Then comes the needs of the paper consumers. In 1877 a New York firm handled 14,000 reams of waxed paper. Not only for wrapping candy is this paper valuable, but fine cutlery, hardware, etc., incased in waxed paper is safe from the encroachment of rust or dampness. Fish and butter, and a score of other articles are also thus wrapped, and there seems literally no end to the uses found for the paper saturated with this pure hydro-carbon. In the chemist's laboratory it is invaluable as a coating for all articles exposed to all manner of powerful dissolvents; brewers find it a capital thing for coating the interior of barrels, and the maker of wax flowers simulates nature in sheets of paraffine. And yet, until Drake drilled his oil well in 1859, the existence in this country of this boon to civilization was unsuspected, and it lay in the depths of Pennsylvania rocks, where thousands, possibly millions of years ago, it was stored by the hands of an all-wise Creator.

THE SHUT-DOWN OF 1884.

On the 21st of August a meeting of producers, to take final action in regard to the shut-down movement, was held at Wagner Opera House, in Bradford. Nearly all the prominent oil men of the region were present. It was found that more than three-fourths of the producers had signed the agreement, and it only remained for those present to declare the shut-down a success and take the necessary action to continue it in force for the remainder of the year 1884. At 1:45 p. m. President H. L. Taylor called the meeting to order. Mr. W. H. Johnson, the Secretary, read a number of messages from gentlemen who could not be present. David Kirk, Esq., Manager of the Executive Committee, read the following report and resolutions:

To the Associated Producers:

Your Executive Committee, to whom you entrusted the management of the movement you inaugurated for the purpose of placing a limit on the production of petroleum and thereby enhancing the value of the same, would respectfully report that unbounded success has attended their efforts. Eight hundred and forty individual operators, firms, co-partners and corporations have signed the agreement to shut down, thereby resulting in the curtailment of operations to such an extent that, where formerly we have had from six to seven hundred new wells under way, the last monthly report shows but one hundred and seventy-nine.

Many of this limited number were commenced by members of the association before signing, and were therefore exempt. The next report will show a still further decline, and the indications now are that in a short time new work will be reduced to the minimum. The great success already obtained is due to the fact that the times were ripe for action; that necessity compelled a union of the producing interests.

The attention of producers was suddenly and rudely called to their situation by the price of their product being forced far below the cost of producing the same; this, too, at a time when the situation in the field led them to expect a rapid rise in prices. This naturally led those that were interested to inquire into the cause of the depression, and upon investigation they found that much of their product was purchased by men with more knowledge than capital; that consequently the larger part of it was in the hands of those who loaned money upon it, who, when panic came, forced this collateral on the market because on it they could very quickly realize the cash. They also found that the manner of dealing in the Exchanges (whom they heretofore regarded as their factors and consequently working for their interest) tended constantly to depreciation and a lower price of the goods entrusted to their care.

They also found that consumers were paying a higher price proportionately than ever before; that the refining interests by thorough organization and union realized during the panic a higher price than they did when crude oil was double the price, and that the producers' own folly alone prevented them from being similarly rewarded. Therefore a universal call is made upon us to continue this organization and extend its scope, to remedy existing evils, and above all to husband and protect our fast failing resources and to secure before extinction our final reward for years of limited compensation.

That our productive territory is failing, and that exhaustion of the supply is threatened, is proven by the following facts: The State geologists, a body of eminently scientific gentlemen, employed by the State at great expense, for our benefit, long since defined the limits of possible productive territory, as a belt not over twenty-five miles in width, and extending from Wellsville, in the State of New York, to Saxonburg, in the State of Pennsylvania, a distance of about 150 miles in length.

Thousands of dry holes drilled despite this warning, on the north, south, east and west, along and beyond, and many even within the prescribed limits, have proven them to be absolutely correct.

The same authority said that in the territory south of Bradford and north of Franklin, Pa., embracing nearly one-half of the prescribed limits, it would be found only in narrow streaks or in isolated pools. The drill and sad experience has also proven this to be true.

The entire extent of the territory embraced in the above limits has been thoroughly tested by the drill, and now we can assert without fear of successful contradiction, that no field approaching that of Bradford, in Pennsylvania, or that of Allegany, in New York, can exist, and any pools or streaks hereafter discovered must be of very limited extent, every strike or failure reducing the chances.

That the wells now producing are undergoing a rapid decline, and that new ones cannot be found to take their place, is proven by the fact that in the year 1883, when comparatively better prices stimulated all to most active opera-

tions, completing in the year 2,886 wells, yet the daily production declined in round numbers from 110,000 barrels to 62,000 barrels. The work of the present year tells the same story; the first part of the year being one of great activity, thus far nearly 2,000 wells having been completed, yet, notwithstanding the fact that one of those rich and productive streaks or pools has been discovered, the runs for this month show that the production is not over 65,000 barrels per day, which must be much below the consumption of the world.

All discoveries of petroleum outside of this territory have proven deficient, either in quantity or in quality, or obtainable only at such expense as to render it almost worthless as a competitor in the markets of the world.

For example, we have been threatened with the oil fields of Russia. She has thus far exported only sample lots, which have been received with disfavor, and we are constantly increasing our shipments to the ports on the Black and Caspian Seas for the use of the people surrounding the Russian fields.

We have been threatened with the California field in our own country. As the cost of a well in that field is from $10,000 to $25,000 each, competition with our product in the markets of the world at less than $4 per barrel is impossible. Supposing she should have any great quantity, which is doubtful, at all other places where a show of oil has been found or where rumor, hints or suspicion has located it, as for instance Colorado, Wyoming, Afghanistan, etc., if it were found in lakes the size of Lake Erie, free to all for the dipping or pumping, it could not compete with our product, as transportation to the ocean, to which it must be brought to reach the markets of the world, would cost more than $2 per barrel, which could not be overcome without a vast outlay of capital, and cannot be done within the reasonable life of our territory. We can place our product on the ocean at a cost for transportation of twenty to thirty cents per barrel.

We have, therefore, no rival and no competitor, nor can we have so long as our supply lasts. The seventh-eighths of the present production and the same proportion of visible productive territory is owned or controlled by the members of our association. They therefore hold the supply required by the consumer of the world in the hollow of their hand, and with proper organized co-operation they have but to name their price, keeping within reasonable bounds, say $2 per barrel, and obtain it.

With the foregoing facts before us, which all disinterested persons conversant therewith must admit to be true, why waste or squander our priceless heritage without receiving a price commensurate with its value; why not co-operate and reap the reward that our inventions, discoveries, industry and investments entitle us to receive.

We have heretofore displayed too much energy, worked too hard, produced too much, and given the results of our energy and hard labor away without getting value received therefor in return. Now that our supply is failing and the end of our business surely approaching, shall we do in the future as we have done in the past and also give the dregs away, and have left on our hands worthless pipe line tanks and junk as evidence of our folly? Or shall we realize our position, maintain and assert our rights, and by uniting together as one man demand and obtain our price? Surely there can be but one answer to this by the owners of the present production, and they have answered it in the affirmative by joining and adhering to our temporary organization. Those operators without production who constitute the bulk of non-signers, of course, we cannot expect, but, as we have shown, their field of operation is limited.

Let us, therefore, make this organization permanent, and paying no attention to the deprecating of buyers or consumers or the hooting of short sellers. Let us form a more perfect union to harmonize and settle any differences that may arise, limit production, husband our resources and financially aid in holding surplus stocks and thus command the price to which we are entitled. To accomplish this we recommend the adoption of the following resolutions:

Resolved, That the agreement to start no new rigs or drilling on old ones until the first day of January, 1885, having been signed by seven-eighths of all producers, is by the terms thereof hereby declared in full force and binding on all, and we congratulate all signers on the happy consummation of their wishes.

Resolved, That our thanks are due and are hereby tendered to our local committees and to the representative papers of the oil regions, who have worked zealously to accomplish this desired end.

Resolved, That we respectfully request the National Transit Company to change their mode of charging and collecting storage from daily to monthly, in order to prevent a daily carrying charge upon spot oil.

Resolved, That the Executive Committee is hereby instructed to prepare and formulate a plan and put into operation a permanent organization that shall provide for local unions in defined territory, which shall manage local affairs and be entitled to representation in a general council composed of representatives selected by the local unions; also provide for a financial institution to market our product and aid in holding surplus oil in times of depression.

Respectfully submitted.

JOHN L. MCKINNEY,
Chairman.

J. T. JONES,
C. S. WHITNEY,
WM. W. HAGUE,
W. J. YOUNG,
H. B. PORTER,
F. W. ANDREWS,
F. T. COAST,
W. H. JOHNSON,
DAVID KIRK,
W. R. WEAVER,
BATEMAN GOE,
JOHN SATTERFIELD.

The above report and resolutions received the hearty endorsement of the assemblage and were unanimously adopted.

Messrs. John L. McKinney, H. L. Taylor, L. H. Smith, David Kirk and W. W. Hague were called upon and spoke on topics of interest and pertinent to the trade. The appended list is the corrected one of those who have signed the agreement to stop the drill until the first day of January. It is a copy of the official one on the books of the Executive Committee, and is put on historical record in the columns of the AGE:

Armstrong, F W
Armstrong, W
Allen, Riley
Allshouse, A S
Abrams, Wm M
Allen, A F
Anglun Bros,
American Oil Co,
Alexander, W J
Anderson, Rauber&Co
Anderson, L S
Anchors, Wm
Anderson & Cable,
Adams & Curtis,
Burns, W F
Bovee & Clawson,
Baldwin, J E
Buchanan, T
Black, F T
Brown, Wm M
Brown, Chas H & Co
Brenneman, J E
Bliss & Patty,
Boyer, S P & Co
Bovee, M W
Breese, H T
Bradner, D G
Bowers, L
Agnew, W D
Archer, G W & Co
Adams, James
Angell Oil Co,
Argue, R W
Abbott, W H
Amm, James & Co
Anderson, C
Angell, W
Anderson & Lewis
Anderson, Samuel
Allen & Morse,
Andrews, F W
Apple, J A
Brambley, Samuel
Beloit & Newman,
Bole, J & F H
Brawley, John B
Black Bros & Nixon,
Barton, E B
Bigley, Samuel
Basch, Fred
Ballard, J B
Barse, C V B
Babcock, D D
Barker, Frank T
Byrom, Henry
Bird, John
Angell, C
Allport, N
Arctic Oil Co,
Abbey, A H
Allen, C F & Co
Atlas Oil Co,
Amm, Seep & Co
Anchor Oil Co,
Anderson, Otis & Co
Anderson, Crowfoot & Co
Anderson, E T
Atwater, D & Co
Apple Bros,
Bovee, Frank A
Bussell, G S
Bailey, F H
Brosnahan D
Black, J F
Baum, Richardson & Co
Bulkley, Geo
Baldwin & Bros,
Brawley Bros,
Barse Oil Co,
Bovee, M W & F A & M Duck
Brinton, B F
Bissett, R L
Bittles, C H
Berry, G A
Blackmar, H L
Brown, Asher
Brown, A L
Brownson, Marcus
Benson, B D & Co
Barnsdall, T N
Browning, J H
Bigley, J S
Blakslee, J B
Booth, Geo P
Boyne, E A
Brown, H W
Bolivar Oil Co
Bell, E M
Caswell, W H
Campbell, J H F
Crawford, W A
Crandall, M D
Carroll, Reuben
Coast, W F
Carnes, J H
Chapman, G
Clinton, Joe
Chamberlin Oil Co,
Clark, Thos B
Cutting, H G & O C
Clark, S C
Conroy & Johnson,
Conroy, C C
Chambers, E E
Clark, N F
Carlin, Thos
Caldwell Oil Co,
Clements, Thomas
Chesehro, L B
Clark & Stearns,
Curry, Peter
Cubbins, W H
Carroll, C M & Co
Day & Hatch,
Dreibelbeis, L P
Dart, G M
Dean, H E
Devlin, T
DeGolia, D
Daniels, J B
Davis, F W
Davis, Adams
Darrow, A K
Duke, Wm
Decker, W P
Dill, John
Ditman, J A
Dougherty, John
Dale, A P
Donnolly, John
Emerson, C H
Ernst, H M
Eaton & Howe,
Evans, J H
Evans, D
Emery, D & Co
Fritz, David
Fox, A J
Foote Bros,
Fritts, E J
Foley, C
Fuller, J M
Forest Oil Co,
Follett, M C
Fink, G C
Flynn Bros,
Fillman, Jos
Goodrich, E
Gardner, D
Glass, C H
Groves, F W
Globe Oil Co,
Given, Thos
Gregory & Dale,
Gregory, T B
Galy Brothers & Co,
Harper, A E
Hanafan, M W & Co
Bronson & Curtis,
Bradley, E C & J B
Bradley & Co,
Bradford Oil Co,
Bennett, A P
Benton, Geo L
Brown, W H
Brown, Alfred S
Blackmar, F L
Blakslee, C F
Brainard, C A
Brown, A S
Buchanan, J C
Baron & Curtis,
Basch & Curtis,
Canan, Thos
Cooper, C C
Crawford, Eben
Crumley, A
Cleminger, Thomas
Clark Bros,
Chamberlin, C C
Curtiss, J M
Chapin & Co,
Coss Oil Co,
Curtis, H W
Cadwell, L B & Co
Chambers, John
Chambers, Wm
Coast, John & Sons
Coast Oil Co,
Carter, J J
Chambers, Wesley
Campbell, F M
Canfield D W
Curry, Frank
Carr, John D
Chauncey Oil Co
Crawford, D M
Crawford, C J
Cranston, Wm
Dyer, Col E H
Dean & Smith,
Dean Oil Co
Davitt, John
Dilworth, C R
Daniels & Co,
Davis, F T
Dow, C M
Davis, H S
Dempsey, R A
Doty, R & J
Davis, Hod
Davis, John W
Dale, Frank B
Darr & Manning,
Daly, Joseph
Duffield, C C
Ervin, W B
Emery, Boyer & Co
Eaton, John
Emery, David
Evarts, S E
Eaton Bros,
Finnegan, M
Furman, S S
Fisher Oil Co,
Fletcher, S M
Ford, H W
Fertig, Frank
Fertig & Henne,
Foust, Phillip
Fink, Joel
Foster C H
Foster, E D
Griffin, P E
Gillmor, Geo
Goldsborough J R
Gregg, Robert
Gartlan, J A
Gates, Joseph
Grant, Thos B
Graham, C M
Hughes & Barker,
Hamilton, B F
Berry & Kelly,
Bryan, Robt
Bushnell, Joseph
Bayne, Fuller & Melvin
Barrett, C S
Boyer, S P
Balltown Oil Co,
Bellamy, W H
Burke, P R
Bennie, Tyler & Wales
Beal, M
Boyne, Colwell & Penny
Brecht, C for Hueston & Brecht
Brecht, C
Carlin Bros & Golden,
Crawford, S W
Crawford, A X
Crawford, Dr A W
Cottrell, A B
Clark & Hanna,
Cowles, E W
Clark, W S
Chapman, F H & Co
Caldwell, Boyer & Co
Curtis, W H
Canfield, H A & Co
Coffin, C H & Co
Camp, C C
Caldwell, Hamsher & Co
Cornen, C A & D
Crocker, Wm
Coast, John
Clements, John
Carroll, Peter
Clark, Owens & Co
Coleman, Penny & Boyne
Curry & C P Curry & D Bosnahan
Craig, J B
Dana, George
Duke & Norton Oil Co,
Dean & Ervin, W B
Dalrymple, N A
Davis, H B
Daniels, J B & Co
Durston, S H
Douglass, A C
Dean, I E
Davis & Murphy
Decker & Davis,
Duke, Wm Jr
Duke, J
Duke, W & J & Willetts
Duke, Willetts & Rauber
Engle, J B
Enterprise Transit Co,
Eaton Oil Co,
Empire Gas Co,
Emery Oil Co,
Edinger, S J
Everett, A per Malone
Fay, John
Francis, N
Fertig, S S
Fuller, P M
French, Willard & Co,
Fisher, Levens & Swan
Fretz, J S
Foust, S
Furness, D E
Fillman, J A
Frisbee, F H
Gregory, A M
Goettel, J & Roess Bros & Co
Goodman & Marks,
Grandin, Kelly & Co
Griffin, John
Grant, Dale & Co
Garrett, E S & Co
Gates, A D
Hewitt, J M
Hockenberry, W B

Hackett, Thos
Hanna, W N & Co
Hovis, L H
Heydrick & Bro,
Hall, E B
Howes Bros & Co,
Hochstetter, A
Haskell, J E
Henne, L S
Hoffman, W H
Hifler, Wm
Holt, E M
Hawkins, F E
Howard, Pat
Hague, W W
Jones, S M
Jones, W F
Jennings & Ross,
Johnson, F S
Jennings, R & Son
Janes, Heman
Jackson, John W
Johnson J O
King, W M
King, J Z
Knox John W
Kincaid, W
Koester, G F
Kearns & Vosburg,
Kean, W S
Kernan John
Kratzer, O J
Klingler, S
King, J H & Co
Lewalton, C
Layman, W M
Lewis & Scott,
Lamb, David
Long, Robert
Lamreaux, C D
Lockwood, M L
Leake, A R
Middleton, H B
Moriarity, D D
Manning, R
Murphy, D W
Morse & Brown,
Mandeville, W H
Minnow Oil Co,
Murray, A K
Mitchell, R Y
Mapes Bros,
Malone, H P
Morgan, John S
Milton, L
Mallory, L E & Co
Morton, W S
Maxwell, G C
McKevett, C H
McConnell, J S
McCleary, W C
McDougall Oil Co
McCray Bros
McKean Oil Co
McMullan, H L
McKelvy & Co
McClymond, J C
McCoy, S W
Nelson, J J
Newberry Bros,
Newell, P
Northern Oil Co,
Neely, J C
O'Dell, J
O'Connor Thomas
O'Day, Dan
Phipps, Porter
Porterfield, R W
Pickering & Smith,
Phillips, F H
Perrine, L D
Potter, I C
Puzzy & Vantine,
Pier, F R
Pacific Oil Co,
Porter H B

Howe, M S
Hardison, W A
Howes, M J
Heydrick J H
Howes, E T
Howe, I G
Hanly, Wm
Hazelwood Oil Co
Hale, L M
Hays, Thomas
Harkness, H M
Hugus, R P
Henny, Wm
Hughes, J H
Henry W C
Jentlor, A
Johnson, E M
Jennings & Curtis,
Johnson, J C
Johnson, J A
Jones, J T
Johnson, H
Jones, A E
Knight, D R
Koch Bros,
Kinsley, John
Keeler, W H
Kahle, B F
Kingsley, J G
Kelchner, P B
Kennedy, P J
Kuhn, J R & Co
Kohlmeyer, H
Kearns, P F
Lord, H C
Leonard H
Lawrence Oil Co
Ley, John
Lammers, John
Lewis, H N
Lewis D H
Lee, R H
Martin, J M
Malarkey, A J
Miner & Wellman,
Meldrum Oil Co,
Morse, J R
Morris, H S
Morris, W F
Mitchell, F W
Moser, Jacob
Mapes, T T
Masson, F L
Maitland, A C
Mayers, Jos H
Mallory & Co
Melvin, C C
Mohan, C H
McEvoy, F T
McKelvey, D & Co
McBride, W C
McCrum, John
McAllister, A C
McCalmont Oil Co
McKeown John
McNish, W C
McMullan, H L & Co
Nobles, W M
Nameless Oil Co
North H H
Newman, G W
Noble, J C
Neely, P N
O'Connor, D
Octave Oil Co,
Onsel John
Perrine, A F
Phillips, Charles
Patterson, J S
Patty, J L & Bro
Piper, Thomas
Porter, George
Pike, Harlow
Pullman, W A & Co
Potts & Slike,
P C L & P Co

Hallock, H H
Heald, P P
Hatch & McCleary,
Hughes, M
Hequemburg & Avery,
Holbrook & Chapman,
Hanly & O'Shea,
Hughes, Richardson & Co
Hazzard, B Z & Co
Harrington, J H
Heeter, W S
Hughes & Coughlin,
Hill John
Ingham, K W
Josett Bros
Jennings H
Jennings, Hunter & Cummings
Johnson, E T & Co
Johnson & Co,
Jennings, Richard
Judd, P H & Co
Kreis, S
Kane City Oil Co,
Keeler W M
Knox, C H
Knapp's Creek Oil Co,
Kellogg, J E
Kelsey, James
Kifer, James
Knight, G A
King, J W & Co
Livingston, G W
Lockwood, McKevett & Co
Lockwood, I H
Leopold Bros, (A, L, E & H)
LeFever, D C
Langdon, C J per Curtis
Miles, H M
Munhall & Smithman,
Macken&Breckenridge
Miner, Wellman & Fuller
Miner, Wellman & Pitts
Morse, Brown&Martin
Morse & W H Martin,
Mitchell, F W & Co
Melvin, Walker&Shannon
Martin, J G
Murphy, J B
Mohan, C G of Mohan Oil Co
Melvin, T J
Matson & Thompson,
McAdoo, James
McManus, T C
McDowell, A C
McVey, W J
McCready, Jas A
McKinney, Jno L & Co
McCarriston James S
McHenry, J B
McElree, T J
Newton, M J
Newton, D A
Newell & Palmer,
Nolan W B
Nye, H H
Oak Shade Oil Co,
O'Brien, Wm
O'Harra, James
Painter, J J
Porterfield & McCombs
Perrin, W L
Phillips Bros, (Allentown)
Post, Joseph
Powers, T J
Pike, Orlando
Portous Thos B
Potts Bros,
Pickering H G

Porcupine Oil Co
Pickett, H E
Plummer, J P
Palmer, A T & Co
Pattorf Bros,
Quick, M W
Rogers, C C & Co
Rowland, J W
Ryder, A B
Rice, H & W W
Roy & Archer,
Rock View Oil Co,
Richardson, Ed
Roth, Phil W
Robertson & Gregg,
Reynolds, F S
Ritts, J V
Ritts & Eshenour,
Scofield, C W
Shear, M
Sloan, Leslie
Showalter, J J
Snider & Wheeler,
Smith, J C
Slingerland, B F
Steele, W J
Sands, L C
Steele, J B
Smedley. A
Straight, R J
Sherman, E R
Sprague, W F
Sellew, W A
Strong, E & Co,
Swan & Levens,
Sterrett, W B
Spargur, W
Short, Alfred
Suhr, Louis
Scofield, R C
Smith, J W
Sherwood, C A
Smiley & Donnolly,
Shugert, R J & Co
Stevens, H
Townsend, C W
Tait, J M
Thomas, D R
Templeton, P A
Taylor, Cornelia
Taylor, Nye & Miles
Thornton & Dobbins,
Thomas, Jas Jr
Tyler, F E & Co
Tarbell & Morris,
Thompson, S G
Tuna Oil Co,
Treat & Mallory,
Union Oil Co,
Van Kleeck, J
Van Campen, Geo
Valley Petroleum Co,
Vensel, B
Van Vleck, G H
Wright, Frank,
Williams, M E
Williams, B F
Wilber, M O
Wolf, J
Wright, J J
Wiser Bros,
Wilson, R G
Wilber, W H
West, E K
White, W W
Wilcox, A I
Wilson, J S
Willetts, Leonard
Whitney, R M
Wachter, H C
Weller, John A
Wright, P B
Walker R J
Williams, M R
Whitney & Wheeler,
Wheeler & Simonds,
Young & Royce,
Young, S E

Palmer, B
Perrine, Thos J
Pangborn, R A
Parker, William
Phillips, Lee
Quigley, David
Randall & Barton,
Richardson, Wm J
Righter, G M
Roach, John F
Roess Bros & Co
Roberts, Dr W B
Ralston & Benedict,
Reno Oil Co,
Reeve, J C
Robbins, W A
Ritts, Elias
Ritts, E & Son
Sprague, F W
Shaw & Sproul,
Schmuck, August
Saeger, J
Sawyer, Wm & Co
Suhr, H
Smith, Frank A
Stewart, H A
Seneca Oil Co,
Schonblom, O F
Sherman Bros,
Shaw, J W
Smith & Jones,
Seep, Joseph
Sullivan, Moses
Smiley, N B
Syndicate Oil Co,
Shank, I L
Scott, Rufus
Short & Campbell,
Shirley, I W
Smith, Matt,
Sands, F F
Sherry, N H
Smiley, A
Saunders, D M
Thompson, A J
Tarbell, F S
Thornton, B F
Tucker, C E
Test Oil Co,
Taylor, O P & Co
Taylor & Bellamy,
Taylor & Zane,
Tousey, C A
Thyng, C G & Co
Taylor, T N
Toy, Samuel
Thompson, W S
Trax & Simmons,
Ure, Bryce,
Vincent, J W
Van Wormer, J H
Vensel, John H
Vance, W A
Van Vleck & Mitchell,
Watkins, A J
Whitnall, J M
Wilder, C
Watson, R D
Waugh, R M
Whitcomb, T W
Walley, W A
Waugh & Porter,
Walters, H M
Wright, C T
White & Ensign,
Whitehead, C B
Whitney, C S & Co
Walker, Levi
Williams, C B & Co
Wilson, H
Wilkins, John T
Werthman, H C
Willetts & Young,
Willetts, Isaac
Whitney C S
Weible & Co,
Young, L W
Young, W J

Post & Blackmar,
Parks, Hazzard & Co
Palmer, A T
Parker, Pliny
Quartette Oil Co
Quinlan, D E
Randall, W H
Rowley, J S
Rose, Robt H
Randolph, George
RoessBros & Schorman
Rogerson, J
Rhodes S C
Robertson, A L
Roess Bros & Siederman
Richardson, J R & Co
Sterritt, Wm J
Stewart Bros & Co,
Swabb, J M
Smyth, A C
Smith, J C & Son
Smith, M A & Co
Smullen, W B
Summit Oil Co,
Sawyer, Wm
Smith, W H
Splane, W W
Schopperle, W
Smith, A B
Sill Farm Oil Co,
Stettheimer, Jos
Strong, O H
Shannon, P M
Smith, Jesse
Spreeter, Chas
Stephans, Wm
Smith, Tom
Shearman, E H & Co
Stearns, J W
Schell, J D
Sutherland & Co
Salisbury, S P
Smedley Bros,
Taylor, E C
Tanner, A P
Thompson, R S
Thompson, W W
Taylor, C O
Taylor & Allen,
Taylor, Norton & Miles
Taylor, Humphrey&Co
Thornton, Jas (except 1 well on lot 31)
Torrey & Jones (except 1 well on lot 91),
Thompson, C W
Thompson, W E
Van Schaick Bros,
Vandergrift, Capt J J
Van Campen, Geo & Sons
Vandergrift, Young & Co
Winkleman, J B
Wolf, S L
Weston, W W
Whitehead & Co,
Wright, C C
Watson, G L
Wagner, Ira
Willoughby, J E
Washington Oil Co,
Watson, W H & Co
Wood & Young,
Wilson, S L
Workman, W I
Welher, N
Wettling John H
Wilson, A
Wilbert, D
Whipple Bros,
Willoughby & Thayer,
Willoughby & Kincaid
Wheeler, Clark & Co
Weible & Boyne,
Yelton, W L
Zane, John P

ECONOMICAL USE OF GAS MADE FROM PETROLEUM.

In its efforts to advance the interests of the petroleum industry, the AGE has procured the following report on the manufacture of gas from crude oil at the State Public School, Coldwater, Michigan:

C. D. Randall, Secretary and Treasurer, in submitting the report of the Engineer, says:

The report shows the correctness of our estimates that the cost by the new gas works would not exceed about $200 per annum, the cost before the works were put in being about $1,000 per annum. The cost of coal and petroleum I know to be correct from my books as Treasurer. The new gas works began operations Sept. 1, 1882. The gas is made from crude petroleum of fine quality, by a process somewhat similar to that used in making coal gas. It is a fixed gas and is substantially the same as coal gas in its chemical properties, except as is shown by its giving a whiter light of greater candle power, which accounts for less being used during the same time than coal gas. The cost for coal gas for the five years preceding the introduction of the oil gas has been as follows: 1878, $1,099.70; 1879, $948; 1880, $988.80; 1881, $945.90; 1882, $943.80. As many lights have been burned with no more restrictions than when coal gas was used. The manufacture of gas at the school has been in all respects, for a public institution, eminently successful.

The Chief Engineer, E. Mansell, reports as follows:

In regard to the success of the gas works I would say, that they are working perfectly. The only repairs put on them during the last year being ten inches of one-inch wrought iron pipe burned out in the super-heater connection to retort, and the replacing of a single fire brick in lining of the furnace door. I anticipate that the tar will nearly, if not quite, pay for the repairs in the future. During the past winter no trouble or diminution of light was experienced, although the main gas pipe running from gas works to buildings is buried only about two feet below the surface of the ground. From this pipe during the year past I have taken less than one-half pint of drip water. The meter which was gummed so badly from the use of coal gas as not to register correctly the contents of the gasometer when first set up, now registers according to the cubical capacity of gasometer. The gas fixtures about the buildings are giving considerably less trouble than formerly, by being less obstructed with condensation collecting in them.

Statement of petroleum gas manufactured from August 30, 1882, to September 1, 1883, at State Public School, Coldwater, Mich.: Total cubic feet, 263,195; gallons oil consumed, 2,136½; pounds coal consumed, 26,016; cost of material, $193.89; time making—hours, 654; candle power, 1,518; average candle power, 26⅗.

Comparative statement of the consumption and cost of coal and oil gas for the years ending September 1, 1882, and September 1, 1883:

	Consumption and cost of coal gas for the year endi'g Sept. 1, 1882.			Consumption and cost of oil gas for the year ending Sept. 1, 1883.	
	Cub. ft.	Cost.		Cost.	Cub. ft.
1881.			**1882.**		
Sept	16,900	$ 50 70	Sept	$ 14 50	16,100
Oct	30,800	92 40	Oct	17 99	25,800
Nov	36,600	109 80	Nov	21 85	32,600
Dec	57,100	171 30	Dec	26 28	35,300
1882.			**1883.**		
Jan	32,600	97 80	Jan	24 50	34,600
Feb	32,200	96 60	Feb	21 00	28,300
Mar	31,500	94 50	March	16 37	22,100
April	20,200	60 60	April	11 57	17,300
May	18,200	54 60	May	10 40	14,400
June	12,800	38 40	June	9 09	11,100
July	11,400	34 20	July	7 49	11,000
Aug	14,300	42 90	August	12 85	14,000
Totals	314,600	$943 80	Totals	$193 89	262,600

CRUDE MARKET FOR AUGUST.

The strengthening of values that began to be manifested toward the close of July continued in August, to the consternation of the bears and the frantic joy of the bulls. The opening price for the month was about 74 cents; the highest point reached was 93½, the lowest 72⅞ and the close was 90¾. The rapid advance was a most welcome relief from the inactivity that had characterized the market during the weeks that immediately followed the panic. Confidence in the higher prices is gradually being restored, and the producer looks forward to the future with increased hopes. The rapid decline of the Wardwell wells and the great falling off in drilling operations as shown by the monthly reports, will in part account for the satisfactory advance in prices. But the continued success of the shut-down movement, and the determined attitude of the producers in deciding to curtail all active operations in the field during the balance of the year, were powerful agents in sustaining the position of the shrewd holders of oil who had been heavy purchasers of certificates from the 75 cent point downward. Certificates sold at the lowest figures on the 1st and 5th of the month, and the highest price was reached on the 26th and the 29th. The mean price for the month was 83¼ cents, a wholesome avance over July's mean, which was only 66¼ cents.

The amount of business transacted at the leading exchanges reflects the general activity and better outlook of the petroleum market.

THE CLEARANCES.

	August. Barrels.	July. Barrels.
Bradford Oil Exchange	143,426,000	97.022,000
Bradford Prod. Pet	44,678,000	29,600,000
Oil City	215,992,000	161,452,000
New York, N. Y. Pet	183,682,000	201,166,000
New York, National	308,916,000	268,024,000
Pittsburgh Oil (old)	8,108,000	4,896,000
Pittsburgh Petroleum (new)	120,002,000	68,834,000
Total	1,024,804,000	830,994,000

THE REFINED MARKET.

The business in refined during August was very satisfactory, though not as large as was anticipated for this season of the year. The advance in crude was followed by a strengthening in the tone of the foreign markets, and an increased demand on the part of the foreign buyers. But the export price at the seaboard remained steady in the vicinity of 8 cents, with very slight fluctuations.

Refined in cases has been in fair demand by British India, Japan, Bombay and Java. Heavy sales were made at 9 to 9⅛ cents.

The domestic demand has been quite active thus early in the season, caused by the action of refiners in lowering their quotations for the home market. Standard White, 110° test, is freely offered at 8 cents, representing a decline of half a cent on the gallon.

France, Spain and Austria have been good customers for crude in barrels at 7 to 7½ cents per gallon. The French have also been large buyers of naphtha, the price of which has been held firm at 7½ for prime lots. The domestic demand for naphtha has been fair.

	New York.	Philadelphia.	Baltimore.	London and Liverpool.	Bremen.	Antwerp.
	Cts.	Cts.	Cts.	Pence.	Marks.	Francs
F 1	8¼	8	8	6⅝	7 65	19¼
S 2	8¼	8⅛	8⅛	6⅝	7 75	19¼
M 4	8⅛	8	8	6⅝	7 65	19¼
T 5	8⅛	8	8	6⅝	7 70	19¼
W 6	8	7⅞	7⅞	6⅝	7 75	19¼
T 7	8⅛	8	8	6⅝	7 75	19⅝
F 8	8⅛	8	8	6⅝	7 75	19⅝
S 9	8⅛	8	8	6⅝	7 75	19⅝
M 11	8⅛	8	8	6⅝	7 75	19½
T 12	8	8	8	6⅝	7 75	19½
W 13	8	8	8	6⅝	7 75	19½
T 14	8	8	8	6⅞	7 70	19½
F 15	7⅞	7¾	7¾	6⅞	7 70	19⅜
S 16	7⅞	7¾	7¾	6⅞	7 70	19⅜
M 18	7¾	7¾	7¾	6⅞	7 70	19⅜
T 19	7⅝	7½	7½	6⅞	7 70	19⅜
W 20	7⅝	7½	7½	6⅞	7 70	19⅜
T 21	7¾	7⅝	7⅝	6⅞	7 60	19¼
F 22	7¾	7⅝	7⅝	6⅝	7 60	19¼
S 23	8	7⅞	7⅞	6⅞	7 70	19⅜
M 25	8⅛	7⅞	7⅞	6⅞	7 70	19⅜
T 26	8⅛	8	8	6⅞	7 70	19⅜
W 27	8	7⅞	7⅞	6⅞	7 70	19⅜
T 28	8⅛	7⅞	7⅞	6⅞	7 80	19¾
F 29	8⅛	8	8	6⅞	7 80	19¾
S 30	8⅛	8	8	6⅞	7 85	19¾

NOTES ON NATURAL GAS.

Gas has been found near the Soldiers' Home, at Dayton, Ohio, at a depth of 200 feet.

The Penn Fuel Company and the Fuel Gas Company, of Pittsburgh, have consolidated. Their legal battle for exclusive privileges being ended, is continued against the Acme Fuel Company. The Acme company claims under its State charter the right to supply heat to the public from gas in the city of Pittsburgh, and will carry its claims up to the Supreme Court if necessary.

The capitalization of the companies engaged in supplying natural gas to the city of Pittsburgh and its suburbs is estimated at over $12,000,000.

The Westinghouse well has an estimated output of 8,000,000 cubic feet of gas per day, equal in heating power to 400 tons of coal daily.

The Acme refinery, at Olean, is now supplied with gas through a six-inch line laid from Bolivar, N. Y. The new fuel will take the place of soft coal, which was used at the refinery to the extent of 100 tons a day.

At Wellsburg, Brooke county, W. Va., there have been seven wells bored for gas, five of which were successful; two other wells are now being put down, and others will likely follow. These wells are about fifteen miles due west from the McGuigan well, in Washington county, Pa. The town of Wellsburg is supplied by one of those wells with gas for both light and fuel. It furnishes gas and fuel for two glass works, one paper mill, one water works, one machine shop, one planing mill, one nail and rolling mill and some 250 private dwellings, besides the churches, halls, etc., and enough gas is going to waste from this same well to supply half the town. Gas was first found on December 28, 1882, in the Barclay well No. 1. In the year following Mr. S. George sunk a well near his paper mill but no gas was found. Shortly after what is known as the Rocky Point well was sunk, where a fair supply of gas was obtained. On April 22, 1884, a strong flow of gas was obtained in Barclay well No. 2, nearly equal to No. 1. On April 24, 1884, another strong flow was found at the Midway well, owned by Dalzell Bros. & Gilmore. On August 7, 1884, a strong flow of gas was found in the Given well, owned by George Given and Hobbs, Brokunier & Co. This spring one good well at Brilliant, Ohio. Some idea may be formed of the quantity of gas one of those wells will produce when it is stated that with a three-inch pipe for an outlet the pressure is fifty pounds to the square inch as it

flows with the pipe open, and the noise of the gas escaping can be heard distinctly for ten miles. It has been estimated by scientific men that the gas escaping from one of these wells in twenty-four hours has the heating capacity of 39,000,000 pounds or 487,500 bushels of coal. Gas is generally obtained at a depth of about 1,300 feet.—*Bradstreet's.*

The citizens of Washington, Pa., are revelling in the luxury of natural gas supplied from wells only two miles from the town.

The Acme Fuel Gas Company is to supply the town of Braddock, Pa., with natural gas for domestic purposes. The mains will be seven inches in diameter and the service pipe one inch. Three gasometers will be constructed, and the gas supplied at seven ounces water pressure.

The intensity of natural gas is six candle and that of coal gas sixteen candle, but the heating power of the former is twice as great as that of the latter, or represented by 1,500 to 1,000 heat units.

Vandergrift, Galey & Co. are laying an eight-inch line from Rochester, Pa., to their gas well in Hopewell township, Beaver county, and will ere long be supplying the principal towns and factories of the Beaver valley with gaseous fuel.

THE trial of A. M. Bowser for the murder of Obadiah M. Haymaker, at the Murraysville gas well, on the 26th of November last, began at Pittsburgh on August 5th and was ended on the evening of August 13th, when the case was given to the jury. On the morning of the 14th a verdict was rendered of "guilty of murder in the second degree." A motion was made for a new trial, which was argued on the 29th of August. On the 30th Judge Collier sentenced the prisoner to imprisonment for ten years in the Western Penitentiary. The defendant had for counsel General Harry White, of Indiana county, and John S. Robb and H. H. McCormick, of Pittsburgh. District Attorney Porter and E. A. Montooth, of Pittsburgh, and Welty McCullough, of Greensburg, represented the prosecution.

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590
April, 1884	34,370	12,261	19,162	65,793
May, 1884	34,946	12,193	19,549	66,688
June, 1884	35,701	11,672	19,977	67,350
July, 1884	34,718	11,114	20,870	66,702
August, 1884	33,782	10,384	22,830	66,996

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to September 1st, 1884.

1882.	Ch'y Gr've.	Cooper.	Balltown.	Total.	Daily Av'ge
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
April	31,191	126,860	71,989	230,040	7,668
May	30,010	107,514	70,069	207,593	6,696
June	25,348	89,554	67,508	182,410	6,080
July	16,206	76,762	76,601	169,569	5,470
August	20,615	63,415	67,883	151,913	4,900
Total Sept. 1, '84	3,307,151	1,931,786	1,388,897	6,627,834	7,761

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to Sept. 1st, 1884. Cherry Grove has produced 3,307,151 barrels, Cooper 1,931,786 and Balltown 1,388,897 barrels. The daily average runs from the three fields during August were 4,900 barrels, a decrease of 570 barrels from the July figures. The daily average runs from the old Cooper section during August were 1,028 barrels, and of the Henry's Mill pool 1,018; making a total of 2,046 barrels. The daily average for the Cooper district for July was 2,476 barrels. The Balltown field has a daily average of 2,189 barrels for

August, against 2,471 in July and 2,250 barrels in June. The two new white sand fields, Baldridge and Wardwell, are enumerated in the list. The pipe line runs from these sections since April 1st, have been as follows:

Month.	Baldridge Runs.	Daily Average.	Wardwell Runs.	Daily Average.
April	25,325	844	14,263	475
May	32,885	1,061	31,451	1.015
June	29,070	969	61,260	2,042
July	27,545	889	132,595	4,277
August	26,134	843	200,985	6,483

SUMMARY of the statements of the National Transit Co., for July and August, 1884.

	August.	July.
Receipts from all sources	2,928,797.07	1,921,905.71
Deliveries	1,802,039.26	1,541,628.30
Gross stocks end of month	40,208,102.96	39,109,754.05
Sediment and surplus	2,801,246.84	2,794,273.01
Total liabilities end of month	37,406,856.12	36,315,481.04
Outstanding acceptances	30,379,998.80	29,320,587,10
Credit balances	7,026,857.32	6,994,893.94

The above receipts from all sources for August were made up as follows:

Transferred from United Pipe Line as reported to N. F. Hilton. representing Conference of Oil Exchanges	13,168.36	
Less sediment and surplus		
Net amount from United Pipe Lines		13,168.36
Runs from wells		1,819,939.08
Received in iron tanks		1,095,689.63
Total		2,928,797.07

The above receipts from all sources for July were made up as follows:

Transferred from United Pipe Lines, as reported to N. F. Hilton, Esq., representing the Conference of Oil Exchanges	13,650.86	
Less sediment and surplus	1,280.63	
Net amount from United Pipe Lines		12,370.23
Runs from wells		1,776,737.91
Received in iron tanks		132,797.57
Total barrels		1,921,905.71

SUMMARY of the statement by the United Pipe Lines September 10, 1884:

Outstanding acceptances and certificates, August 31	16,638.75
Credit balances	34,959.48
Total liabilities August 31	51,598.23
Gross stocks August 31	63,906.31
Sediment and surplus	12,308.08
Receipts from all sources	....
Net stocks delivered to National Transit Co August	13,168.36

JULY SUMMARY.

Acceptances and certificates July 31	16,638.75
Credit balances July 31	48,127.84
Total liabilities July 31	64,766.59
Gross stocks	77,048.73
Sediment and surplus	12,282.14
Receipts from all sources	
Total deliveries	12,370.23

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for August, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of August		2,504,907.91
Quantity of crude petroleum at close of August	1,615,319.54	
Less sediment and surplus	87,875.70	1,527,443.84
Receipts during August		241,298.87
Deliveries during August—to refiners	177,791.26	
" " " —to other parties	1,088,850.53	
		1,266,641.79
Outstanding certificates, accepted orders, etc		826,000.00
Credit balances		701,443.84
Total liabilities August 31 1884		1,527,443.84

JULY SUMMARY.

		Barrels.
Quantity of crude petroleum in custody at beginning of July		2,543,063.41
Quantity of crude petroleum at close of July	2,661,943.78	
Less sediment and surplus	157,035.87	
		2,504,907.91
Receipts during July		275,483.04
Deliveries during July—to refiners	187,320.80	
" " " —to other parties	132,797.57	
		320,118.37
Outstanding certificates, accepted orders, etc		1,797,000.00
Credit balances		707,907.91
Total liabilities July 31, 1884		2,504,907.91

RUNS, SHIPMENTS AND STOCKS.

RUNS OR RECEIPTS.

Pipe Line.	August, 1884.	July, 1884.
National Transit Co	1,819,939.08	1,776,737.91
Tidewater	241,298.87	275,483.04
Octave Oil Co	2,721.00	3,262.57
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	8,504.68	6,960.93
Cranberry Pipe Line	4,402.46	5,324.19
Total	2.076,866.09	2,067,768.64
Daily average	66,995.68	66,702.21

In the above runs only the oil received by the National Transit Co. directly from the wells, is included.

DELIVERIES OR SHIPMENTS.

Pipe Line.	August, 1884.	July, 1884.
National Transit Co	1,802,039.26	1,541,628.30
Tidewater	177,791.26	187,320.80
Octave Oil Co	3,138.00	3,044.40
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	10,529.75	3,551.85
Cranberry Pipe Line	2,959.50	5,724.41
Total	1,996,457.77	1,741,269.76
Daily average shipments	64,401.86	56,169.99

In the above shipments only the oil delivered to refiners is included.

Daily excess of runs over shipments August, 1884	2,593.82
Daily excess of runs over shipments, July, 1884	10,532.22
Daily excess of runs over shipments, June, 1884	6,443.56
Daily excess of runs over shipments, May, 1884	10,239.88
Daily excess of runs over shipments, April, 1884	11,020.89
Daily excess of runs over shipments, March, 1884	4,144.98
Daily exeess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

Pipe Line.	August 31, 1884.	July 31, 1884.
National Transit Co	37,406,856.12	36,315,481.04
Tidewater	1,527,443.84	2,504,907.91
Octave Oil Co	5,131.00	8,198.68
Charley Run	3,717.00	3,717.00
Shaffer Run	30,636.32	30,636,32
Franklin (limited)	35 295.16	37,320.23
Cranberry Pipe Line	25,326.34	23,883.38
United Pipe Line	51,598.23	64,766.59
Total	39,086,004.01	38,988,911.15

Stocks increased August, 1884	97,092.86
Stocks increased July, 1884	323,063.10
Stocks increased June, 1884	190,320.23
Stocks increased May, 1884	322,981.75
Stocks increased April, 1884	1,945,919.83
Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	386,004.51

	Receipts.	Deliveries.
Daily Average August, 1884	66,996	64,402
Daily Average July, 1884	66,702	56,170
Daily Average June, 1884	67,350	60,907
Daily Average May, 1884	66,688	56,448
Daily Average April, 1884	65,794	54,773
Daily Average March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52,737
Daily Average February	65,208	44,352
Daily Average January	65,125	43,813

A NEW substance, called "Vulcoleine," is made from petroleum, and is used as a substitute for bisulphide of carbon. It is especially valuable for dissolving gums and resins for waterproofing, and for vulcanizing india rubber in conjunction with chloride of sulphur or other vulcanizing agents.

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to Aug. 30, for the years 1883, 1884, were as follows:

	1884. GALLONS.	1883. GALLONS.
From Boston	4,378,943	3,290,509
Philadelphia	54,489,075	48,690,734
Baltimore	7,709,054	5,596,883
Richmond	....	173,449
Total	66,577,072	57,751,575
From New York	244,960,120	276,373,372
Total exports from United States	311,537,192	334,124,947

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to September 6th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
GREAT BRITAIN.—London	9,610,737	25,518,164
Liverpool	3,540,932	5,591,027
Bristol	1,855,223	1,401,474
Ireland	3,957,911	3,805,288
Other ports	4,498,930	4,272,103
GERMANY—Bremen	22,751,692	31,139,605
Hamburg	24,195,951	26,256,094
Konigsburg and Stettin	5,231,055	3,869,524
Dantzic	537,988	717,054
Other Ports	1,372,183	835,570
FRANCE—Marseilles	....	....
Havre	....	....
Norway and Sweden	4,882,432	6,801,429
Russia	188,822	1,539,156
Denmark	5,690,004	6,861,373
Belgium	19,870,376	28,978,906
Holland	11,982,681	10,020,983
Spain	300,960	142,770
Portugal	840,585	1,463,463
Gibraltar and Malta	3,016,370	1,516,140
Italy	1,771,111	1,172,459
AUSTRIA.—Trieste, etc	4,125,912	7,952,816
Greece	302,710	1,280,410
Turkey in Europe	2,042,730	2,655,891
Turkey in Asia	2,633,115	2,601,742
India	20,815,180	9,833,390
China, Japan, etc	17,308,220	19,004,610
East Indies	19,457,500	23,227,000
AFRICA.—Alexandria, etc. E	1,742,340	1,576,830
Canary Islands	87,759	94,345
Other Ports	2,123,992	4,050,609
Australia	1,417,944	1,349,124
New Zealand	440,720	386,300
Sandwich Islands	204,080	202,500
SOUTH AMERICA.—Brazil	2,935,878	3,612,492
Argentine Confederation	2,815,770	2,943,370
Chili and Peru	470,862	1,114,400
U. S. Columbia	300,294	184,817
Venezuela	476,541	434,375
Other Ports	52,300	114,461
Central America	185,350	119,416
Mexico	788,340	962,324
British North American Colonies	555,004	558,118
Cuba	336,936	178,645
British West Indies and Br. Guiana	1,105,814	1,199,609
Other West Indies	870,520	679,327
Total . . . Galls.	209,691,754	248,309,503

CRUDE.

	1884.	1883.
FRANCE.—Havre	5,361,169	5,967,867
Marseilles	3,794,109	2,239,389
Bordeaux	1,274,941	1,451,006
Dunkirk	4,437,754	4,514,748
Other Ports	6,796,823	4,911,695
Antwerp	....	....
Bremen	....	753,616
Norway and Sweden	....	62,374
Spain	7,614,328	6,815,853
Cuba	1,740,616	1,280,735
Other Ports	5,648,915	2,193,471
Total . . . Galls.	36,668,655	30,190,754

NAPHTHA.

	1884.	1883.
Great Britain	2,500,349	3,493,360
France	1,777,426	2,626,497
Germany	521,780	1,561,081
Other Europe	750,690	1,508,878
Various Ports	125,478	64,630
Total . . . Galls.	5,675,723	9,254,446

RESIDUUM.

	1884.	1883.
To all Ports	3,047,345	4,703,571

	GALLONS.
Total Refined since January 1, actual shipments	212,579,495
do do do do crude equivalent	283,439,327
do Crude do do actual shipments	37,732,640
Grand Total Crude and Crude equivalent . . . . galls.	321,171,967
Same time, 1883	361,270,091

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, September 6th, 1884:

PORTS.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	54	32	21	4	1	112
Philadelphia	55	11	4	2	0	72
Baltimore	16	0	0	0	1	17
Boston	2	1	0	0	0	3
Total Sept. 6	127	44	25	6	2	204
Total Aug. 9	100	51	14	14	5	184
Difference	27	7	11	8	3	20

OBITUARY.

Austin L., son of William Munhall, of Pittsburgh, died suddenly, of quinsy, in Bradford, on the afternoon of August 13th. Deceased represented Munhall & Smithman in the Bradford field, and was a young man of fine business qualities. The remains were escorted to Pittsburgh by a delegation of his many warm friends. He was twenty-six years of age and unmarried.

IN the case of the Atlantic Giant Powder Company, of California, vs. Marcus Hulings, Barr, Howe, et al., Judge Acheson, of the U. S. Circuit Court, on July 29, handed down an opinion in favor of the defendants. The suits were brought to restrain the defendants from infringing upon letters patent for methods of exploding nitro-glycerine and for injunctions restraining them from further infringements. The claims covered all methods of exploding the compound, and if they had been sustained, would have placed the giant's hand on every oil producer in the country. James C. Boyce, Esq., our well-known Bradford Solicitor of Patents, was the successful attorney for the defendants.

ON THE 15th inst. there were but seventeen wells drilling in the Wardwell section, and only four new rigs were in process of construction. On the first of August there were 38 wells drilling and 12 under way.

THE following named persons have become members of the Bradford Oil Exchange since August 1st: L. A. Baker, Samuel N. Amm, A. D. Smith, E. W. Rolfe, F. P. Leonard, T. J. Melvin, D. P. Brooks, John Clements, John F. Merrill and Clark Stewart. The following named persons have lost their membership by sale of stock: J. H. Webb, C. J. Lane, G. S. Daniels, W. G. Young, F. W. Andrews and R. P. Miller.

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

PUBLISHED MONTHLY BY

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THE PRODUCING REGION.

ALLEGANY FIELD.

Sixteen wells were finished in the Allegany field during August, with an estimated new production on the last day of the month of 116 barrels. Two dry holes were drilled. That of Palmeter & Co., on lot 24, north of the village of Wellsville, disclosed the existence of from 12 to 15 feet of sand, in which there was a slight showing of oil. On the first of September there were 8 new rigs up and building in the field; 62 old ones had been standing for 30 days or longer and the drill was vibrating at 9 wells. The average daily pipe line runs for August were 10,384 barrels. The July average was 11,114. Unless a large amount of cleaning out was done and other improving changes about the old wells, the falling off in the pipe line runs would indicate that the production of the district declined. The shut-down movement is holding throughout the field, and producers seem disposed to wait until 1885 before again setting the drill in motion in the light, undrilled territory of the Allegany field.

BRADFORD.

The autumn leaves will fall on fewer new rigs in the Bradford district than at any time since its production began to ebb. Throughout its broad domain a quiet prevails more painful to those anxious to do new work than that of the summer of the Cherry Grove fiasco. On the first of September there were three new rigs up and building in the district, 61 old rigs had been standing for 30 days or longer. The count showed 12 wells drilling. The month of August was uneventful in the history of the Bradford field. On lot 568, in the Cole Creek water basin, John McKeown finished a well which started above 400 barrels and held at this figure for a number of days. It is located a short distance from smaller wells, and opened up nothing new. On the Swink farm, along the eastern bordering line of the Indian Creek development, Parmeter Bros. drilled a dry hole. The theory was entertained that a connecting link might exist between Indian Creek's prolific territory and the light, yielding rock about Windfall. The test well of Parmeter Bros. showed 18 feet of sand, which was struck at a depth of 1,338 feet. T. N. Barnsdall's venture, on the southwestern corner of warrant 2248, exhibited indications which warranted a light producer, but the crude display was not sufficiently large to induce him to put the well in producing order. The Bradford August pipe line runs fall below those of July.

In many sections of the Bradford district the work of cleaning out and shooting old wells is being pushed with vigor. During the past year a large number of old wells have been drilled deeper on what is known as the fourth sand streak. On the Barse tract the drill stopped in slate after passing through about 30 to 40 feet of sand. Below this slate, which had a thickness of fifteen feet, another layer of sand was encountered having as much body as the upper strata. In this section a number of strings of tools are kept in motion. A large number of partially dismantled derricks have been repaired during the spring and summer months. Numerous wells have been changed from flowing to pumping. These numerous improvements have had much to do with holding the Bradford production at nearly a steady figure during the past six months.

WARREN AND FOREST.

The middle field, with its scattered districts, furnished few interesting features during the midsummer month. Outside of the Glade developments only 22 wells were completed and 8 of these were dry. Compared with the figures for July, the entire section shows a decrease of 11 in the number of wells completed, and a decline of 5,508 barrels in the new production. The operations under way also show a falling off of 19 in the totals. There were 5 more new rigs, 7 less old rigs and 17 fewer drilling wells on the 1st of September than on the 1st of August. This great drop in new production is furnished mainly by the Wardwell pool, which completed more wells in August than in July, but of a much reduced productive calibre. The changes that are wrought by the brief interval of 30 days of time in a pebble rock field of the Wardwell stripe are marvellous. At the close of July Glade City was the scene of wildest activity; a bustling army of men with scores of teams, labored incessantly. Houses, stores and restau-

rants were building, rigs were going up on all sides, the drill was going down with a rapidity unequalled before in the history of an oil development: stages dashed from Warren to Glade every half hour, filled to overflowing with human freight, scouts on horseback rushed hither and thither, telegraph and telephone offices did an immense business, trains of cars unloaded their heavy supplies of boilers, engines, rig irons, casing, etc., at the freight platforms, pipe line employes were hurried to erect pumping stations and lay the iron conductors that were to lead into other parts of the country the over supply of crude, and on every hand evidences of every kind showed the vast extent of an engrossing and apparently profitable business enterprise. A trip through the field at the present time reveals an entirely different state of affairs. A few rigs are building and a few wells drilling on the south side of the river, and that is all. The floating population is all gone. A few boarding house tents still remain, but they wear a very quiet aspect. The field has been circumscribed in every direction. No more thousand-barrel wells are opened up nor can be. The producing sand has rapidly exhausted itself, and drillers are kept busy at the old wells running tools and in every known way stimulating the fast fading powers of wells, the oldest of which are not over two months of age. A new well that starts at 200 barrels is now considered exceptionally large, even when located in a part of the field that furnished 1500-barrel producers less than 60 days ago. The following table gives a summary of the Wardwell development since last September, when it first began to come prominently before the trade:

Month.	Wells.	Production.	Dry.
September, 1883	4	71	0
October	6	72	3
November	8	216	0
December	6	71	1
January, 1884	6	93	0
February	6	69	0
March	13	201	5
April	8	49	3
May	11	570	5
June	11	1,390	2
July	38	7,250	3
August	52	2,385	1
Total	169	..	23

Since the first of the month the Anchor Oil Co.'s well on lot 460, on the southwestern end of the development, has been drilled to the proper depth and found dry in the Wardwell sand. The well is still drilling. Adams & Story's well, on lot 502, was in the sand at the latter end of the month and showing considerable gas. The owners have erected a tank, and are seemingly intent on creating a mysterious state of affairs, but the trade apprehends little danger from that part of the country. Allen & Co. have completed a duster on the northwestern borders of the field. It is located midway between the old Bruce well and the J. R. Johnson well on the H. M. Smith farm.

At the present writing, September 10th, there are but five wells drilling on the north side of the river, and with their completion operations in that section will cease for many months to come. The other work now under way is confined to the small area between the Hoffman well on the south and the Allegheny on the north; and before the autumn leaves are brown, Wardwell will be as quiet, as unobtrusive and as unimportant a factor in the petroleum business as the world-renowned but now forgotten Cherry Grove.

BALLTOWN AND COOPER.

Three wells were completed in the Balltown field during August, with an estimated production of 110 barrels on the last day of the month. All three wells were in the neighborhood of the Emery & Agnew strike, on Warrant 3,195. The annex to the field brought about by this discovery is insignificant in area and productive capacity. N. F. Clark's No. 1, which was reported dry and abandoned in July, has since been recased, and by the aid of a powerful torpedo developed into a small producer. The old Barnsdall & Briody well, near the centre of the north line of Warrant 3,195, which has long been considered a positive failure, has been cleaned out and drilled deeper. It filled up nicely and made a showing for a small producer. When ready to torpedo an accident occurred by which 20 quarts of nitro-glycerine were exploded in the casing. Another well has been located near this venture, and farther to the north L. Kraeer has located a test well near the southwest corner of lot 741, in Cherry Grove township.

In the Cooper district only one well was finished, and that in the extreme northeastern end of the field. It was drilled by Horton, Crary & Co., and is located near the centre of the western line of lot 395. Captain Haight, the grand commander of forces at the Shannon mystery, has a wild cat under way on Warrant 3,198, which adjoins the Cooper tract on the west.

LOWER COUNTRY.

This division of the field slightly increased its list of operations during August, and bids fair to do better still during September. The operators in the various districts of the lower field have, with few exceptions, declined to sign the shutdown agreement, and are, therefore, unrestricted

in their operations. Still the territory of the lower country is not much commented upon in summing up the field, and attracts but little attention from the trade. The only event of much interest in this section for some time was the completion of the Phillips Bros'. well, on the Bartley farm, in the Baldridge district. This well is located about 1,200 feet from the Armstrong, Boyd & Semple well, on Thorn creek, its direction from the latter being about 22 degrees east of north. When the first stratum of sand was struck the hole filled up with oil, though there was considerable salt water running in, and the well showed for a 75-barrel pumper. Drilling was continued, and the lower stratum was penetrated late in the evening of the 30th ult. A heavy flow occurred, and connections were at once made to the tank, allowing the well to put 450 barrels to its credit the first 24 hours. The second 24 hours the output was about 350 barrels, though the bit had entered the lower sand but a short distance. The probabilities are favorable to the development of another pool such as the old Baldridge and Wallace-McCalmont pools. Of course, these pools are not of very great importance in themselves, but the discovery of three of them in close proximity leads to the inference that many more may be found, and there is always the incentive to the wildcatter and the fear to the trade that something better may still be found in that section.

At St. Joe the developments of last month were not of a very encouraging nature. Phillips Bros. completed two wells in advance of previous developments, both of which had to contend with enormous quantities of salt water. When first tubed these wells pumped very little oil, but they have gradually improved to fair wells, though not yet approaching the same firm's No. 1. Dennison & Hoyt also finished a well near Phillips No. 1, which refused to put out more than five barrels until shot. The sand was of excellent quality and over 60 feet thick. A forty-quart shot, the first ever used in the district, was put in. A cart-load of sand was knocked down and the well improved to 40 barrels.

Gilbert & Vanderlin completed a wildcat near Murrinsville, in Butler, the latter part of August, which is doing 7 barrels, and they will drill a number of wells in the vicinity. There has been a strong prejudice in favor of that section ever since the opening of the Bullion field, and dry holes have been drilled all the way from Bullion down, the last being Dr. Hamilton's near Barkeyville. Venango and Clarion have been devoid of interest for some time.

CRUDE CHRONOLOGY FOR AUGUST.

1—Monthly report for July bullish on operations and bearish on new production.

2—Wardwell production estimated to be 9,000 to 10,000 barrels.

4—Book, Gartland & Co.'s No. 1, south side of river at Wardwell, drilled into sand with better showing than expected.

5—Book, Gartlan & Co.'s not better than 200 barrels. Made 16 barrels best hour. Not so good as showing indicated.

7—Report of salt water affecting Wardwell wells. Report not well founded.

8—Twelve-hour gauge 116 Wardwell wells, 5,100 barrels. Book, Gartlan & Co.'s No. 2 made 42 barrels first three hours.

11—Wall Street Bank, 49 Broad street, New York, closed its doors "on account of irregularities on the part of the cashier."

12—Hays & Gartlan's Nos. 5 and 6, Wardwell, falsely reported stopped flowing from exhaustion. Barnsdall & Eldred's No. 1 shut down on top of sand.

13—Contradictory reports and rumors concerning Wardwell agitated the trade.

14—Barnsdall & Eldred drilled in under guard. Reported from 100 to 350 barrels, owners claiming latter figures. Mills & Mullin, Granberry Stevens farm, Macksburg, reported at 150 barrels.

15—Barnsdall & Eldred opened up to public. Made over 300 barrels first 24 hours.

16—Reed & Brenneman, near Barnsdall, comparatively light.

18—Well of John McKeown, at Simpson, Bingham lands, reported at 700 barrels. Later and better information placed it at 350. Book & Gartlan's No. 3 started in at 1,100 barrels for 24 hours ending to-day.

20—Wardwell production reported 5,500 to 6,000 barrels. Book & Gartlan's No. 3 said to be down to 150 barrels.

21—Shut-down agreement declared binding by Producers' Executive Committee, seven-eighths of all active producers having signed.

23—Wardwell production reported below 5,000 barrels.

25—Barnsdall No. 5, Wardwell, started at 50 barrels an hour, but declined to nine barrels for third hour. Wardwell production reported below 4,000 barrels.

28—Bullish monthly report anticipated.

29—Phillips Bros.', Bartley farm, Baldridge, reported good for 75 barrels or better.

30—Phillips' Bartley No. 1 began flowing at a 400-barrel rate late in the evening.

AUGUST OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN AUGUST, 1884.

Allegany Field.

Scio.

Lot. Owner.	Barrels.
4, Jas McEnroe	10
Wells	1
Production	01
Dry	0

Alma.

31, J H Thornton	dry
91, Torrey & Jones	5
Wells	2
Production	5
Dry	1

Wirt.

1, George McCoy No 2	8
1, Earley Bros	8
Brown, Riley Smith est	5
Phillips, Ostrander	8
Wells	4
Production	29
Dry	0

Bolivar.

7, A A Hopkins No 16	8
15, Kelly & McMurray No 4	8
23, F C Streeter No 5	10
23, Irvin & Morgan No 3	10
31, Hydrick & Co No 5	8
Wetherby, Empire Gas Co No 7	8
Ford, do do	10
Wells	7
Production	62

Clarksville.

9, H C Werthman No 4	10
Wells	1
Production	10
Dry	0

Miscellaneous.

Wellsville, Palmeter & Co	dry
Wells	1
Production	0

Bradford Field.

East and West Branches.

Farm. Operator.	Barrels.
Buchanan, Snyder est	5
Bingham, G H Van Vleck No 31	5
Whittaker, F W Davis No 2	5
Inglesby, P T & W C Kennedy No 4	6
Lovejoy, Willoughby & Thayer No 5	10

Quintuple.

283, P Newell	6
Wells	6
Production	37
Dry	0

Kendall Creek.

Mack, J A Logan & Seekins	10
Bingham, Short & Co	10
Moore, Watson & Curtis	6
Wells	3
Production	26

Foster Brook.

C, B & H, Josett Bros	10
Wells	1
Production	10

Four Mile.

Stevens, William Burns	10
" J H Hughes	10
Johnson, Hayes & Son	10
VanCampen, Adams, Carson & Co	8
Wells	4
Production	38

Indian Creek.

Keating, J L McKinney & Co No 34	8
Heighsle, Dr W L Crissman No 4	5
Swink, L E Mallory	dry
Barse, Phillip Mitchell	10
Wells	4
Production	23
Dry	1

Cole Creek.

Bingham, lot 579, Union Oil Co No 9	50
do lot 574, Hamlin & Rose No 4	25
do lot 580, John McKeown No 12	15
do lot 568, do No 13	100
Wells	4
Production	190

Kinzua.

5, John J Carter	10
Ormsby, Higgins & Co	dry
LaFayette, Barnsdall Bros	dry
136, P T & W C Kennedy	9

Kinzua Village.

Dew Drop, McElree & Tucker est	8
Wells	5
Production	27
Dry	2

Warren and Forest.

Glade and other Towns.

Tract. Owner.	Barrels.
John Sweating, J A Magee No 2	10
Verbeck, C W H Verbeck No 4	5
Elk twp 5576, Calhoun & Co	dry
Owens (North Warren), P T Campbell & Co	dry
Amann do Wilson Law	dry
Bowers, Union Oil Co No 2	20
H M Smith, J R Johnson & Co No 1	40
Hertzell, Smith & Kern	10
Cobham, The Pooled Companies No 9	100
do do do No 10	100
do do do No 11	100
do do do No 12	75
do do do No 13	90
do do do No 14	50
do do do No 15	150
do do do No 16	75
J L McWilliams, Hayes, Gartlan & Co No 4	60
do do No 5	40
do do No 6	90
do do No 7	40
do do No 8	30
Cummings Island, Fred Hayes & Co No 3	20
do do No 4	10
A McWilliams, Pickett & Stone No 4	65
do do No 6	40
do do No 7	30
do Roth & Markham No 2	50
do do No 3	60
J L McWilliams Reid & Brown No 6	5
do Miller & Odell No 2	15
do Greenlee & Russell No 1	10
do Windsor Brothers	5
Village lot Fred Hue & Co	40
do Dimmick, Pratt & Co	40
do W W Ballard	30
Railroad, Borchert & Smith No 2	50
do do No 3	dry
Rogers Island, Chambers & Galloway No 2	20
do do do No 3	25
do do do No 4	20
do do do No 5	35
do do No 6 est	10
Rogers (Brown pur), Anchor Oil Co No 2	25
do do do No 3	15
do Book & Gartlan No 1	30
do do No 2	30
do do No 3	50
do do No 4	70
do do No 5	70
do do No 6	70
Eldred, Barnsdall Bros No 3	100
Rogers, do No 4	30
do do No 5	50
do do No 6	80
do Reid & Brenneman	50
Lot 461, O Hoffman No 2 est	50
Hertzell, Brown Brothers & Spence est	15
Wells	57
Production	2400
Dry	4

Clarendon.

494, Patterson & Soliday No 10	8
526, F G Keatley No 6	8
528, Beckner & Co No 3	6
530, Beecher & Copeland No 5	10
582, H G Lapham No 6	8
583, F H Rockwell & Co No 12	8
591, Clark, & Foster No 5	10
590, do No 1	10
Wells	8
Production	68

Tiona.

83, Fertig & Henne No 1	8
204, Emerson & Farnsworth No 4	10
Wells	2
Production	18

Cooper District.

395, Horton, Crary & Co	10
Wells	1
Production	10
Dry	0

Balltown.

3195, Emery, Agnew & Co No 4	25
3195, do do No 5	10
3195, J A Gartlan No 5	75
Wells	3
Production	110
Dry	0

Miscellaneous.

Scott Run, C A Campbell	dry
Warrant 3561, Frost & Co	dry
do 3616, Palmer & Butts	dry
Wilcox, Wilcox Tannery Co	dry
McCormick, Dr Hunter	dry
Lot 265, Hunter & McGrew	dry
Tionesta, Tionesta Oil Co	dry
5228, Vandergrift	dry
Wells	8
Production	0
Dry	8

Lower Country.

Venango.

Farm. Operator.	Barrels.
Sands, J B Smithman	3
Diamond, Manning & Darr	10
do W H Loots	8
Tract 67, J B Smithman	7
Pioneer, Unknown	8
Mt Pleasant, Franklin Oil Co	dry

Vicinity Emlenton.

McCullough, Curry & Co	5
L Sloan, J Martin	12
McGinnis, Harrington Bros	dry
Scott, Scott & Barnard	2
Middleton, Wm Forster	6
Mariasville, Crawford & Agnew	4
Wells	12
Production	65
Dry	2

Clarion.

Banner, Banner Oil Co	8
M Best, Mary Eagan	5
Fullerton, Edwards & Co	6
Wells	3
Production	19
Dry	0

Butler and Armstrong.

McCrea, Butler Gas Co	dry
Daubenspeck, Hart & Co	dry
Kelly, Edmonds & Co	20
Seybert, Seybert Bros	12
Turner, W J McKee	13
Davis, Hays & Maxwell	10
Kamerer, Hunter & Cummings	15
Murrinsville, Gilbert & Vanderlin	15
Zang, Denison & Co No 4	25
Mulligan, McGuire & Co No 4	75
Muenster, Phillips Bros No 2	20
do do No 3	25
Wells	12
Production	230
Dry	2

DRILLING WELLS, RIGS UP AND BUILDING AUG. 1.

Allegany Field.

Scio.

Lot. Owner.	Depth.
2, Coast Oil Co No 31 (old)	rig
2, Pennell Bros No 4 (old)	rig
3, Coyle (old)	rig
4, Jas McEnroe No 4 (old	rig
4, Breckenridge (old)	rig
11, Thompson & Vesey No 4 (old)	rig
11, Lowcomer & Turner (old)	rig

12, Allen & Morse (old)	rig
12, Griffin & Co No 7 (old)	rig
12, do No 10 (old)	rig
50, The Union Oil Co No 8 (old)	rig
50, do do No 9 (old)	rig
L Morton farm, A J Applebee No 3 (old)	rig

New rigs . . . 0
Old rigs . . . 13
Drilling . . . 0
Total . . . 13

Alma.

1, Phillips Bros No 14 (shut down)	300
1, do No 15 (old)	rig
23, Vance & Horton (old)	3 rigs
24, New Milford Oil Co (old)	2 rigs
24, W F Jones (old)	rig
24, Sutherland & Co No 5 (old)	rig
38, Perrin & Young No 15 (old)	rig
38, do	rig bldg
51, Sawyer & Co (old)	rig
55, Wanamaker & Decker	rig
88, Duke & Co (old)	rig
109, Dewees & Donnelly	rig bldg
142, Dean & Smith No 5 (old)	rig
140, Duke, Willets & Rauber	500

New rigs . . . 3
Old rigs . . . 12
Wells drilling . . . 2
Total . . . 17

Wirt.

14, Lester & Co. (old)	rig
30, John Moran	drilling
33, Miner, Wellman & Fuller (old)	rig
43, (Wilcox farm) AlleganyGasCo (old)	rig
61, Muldoon Oil Co (old)	rig
1, George McCoy No 3	100
Lattimer & Stearns	500

New rigs . . . 0
Old rigs . . . 4
Wells drilling . . . 3
Total . . . 7

Bolivar.

6, I Collins	drilling
7, W & J Duke No 16 (old)	rig
7, Coast Oil Co No 20 (old)	rig
7, do No 42 (old)	rig
7, do No 45 (old)	rig
15, Fay (old)	rig
15, Kelly & McMurray	rig
15, Sawyer & Co (old)	rig
15, John Benninger	800
15, do (old)	rig
23, F C Streeter & Co No 6 (old)	rig
23, do do No 7	rig
23, Irvin & Morgan No 3	rig
30, Fritz & Lowry No 8 (old)	rig
30, do do No 10 (old)	rig
31, Smith & Co No 10 (old)	rig
31, Hydrick & Co No 6	rig bldg
Wetherby, Empire Gas Co (old)	2 rigs

New rigs . . . 4
Old rigs . . . 13
Drilling . . . 2
Total . . . 19

Clarksville.

9, Heuston & Brecht No 4 (old)	rig
9, Merritt (old)	rig
12, Cuba Gas Co (old)	rig

New rigs . . . 0
Old rigs . . . 3
Wells drilling . . . 0
Total . . . 3

Genesee.

8, I Willets (old)	rig
8, do (old)	rig
14, C W Scofield No 9	drilling
14, do No 10	rig
14, Merwin (old)	rig
21, Empire Gas Co No 3 (old)	rig
22, I Willets No 13 (old)	rig
22, do No 14 (old)	rig
22, do No 15 (old)	rig
22, do (old)	rig
23, Hughes & Coughlin (old)	rig
23, Emery Oil Co No 16 (old)	rig
23, do do No 17 (old)	rig
Champlain, Emery Oil Co No 8 (old)	rig
29, William Cranston (old)	rig
31, H L McMullan & Co (old)	rig
38, S E Young (old)	rig
38, Empire Gas Co (old)	rig

New rigs . . . 1
Old rigs . . . 16
Drilling . . . 1
Total . . . 18

Miscellaneous.

Towanda, C M Carroll & Co (shut down)	600
Gains, Peck & Tait (old)	rig

New rigs . . . 0
Old rigs . . . 1
Wells drilling . . . 1
Total . . . 2

Bradford Field.

East and West Branches.

Farm. Operator.	Depth.
Hinchey, S W McMurray & Co No 4	drilling
Paton, McClure & Co (old)	rig
Clark, McCray Bros (old)	rig
Willis, do No 29	550
Glass, Barnsdall Bros (old)	rig
Bingham, lot 186, R J Straight No 3 (old)	rig
Dent, P C L & P Co No 64 (old)	rig
do do do No 65 (old)	rig
do Whitney & Wheeler No 41 (old)	rig
Mill lot, Whitney & Wheeler No 9 (old)	rig
Crooker, Jennings & Curtis No 10 (old)	rig
Paul, Bayne, Fuller & Melvin No 5 (old)	rig
Wilson, West Branch Oil Co No 11 (old)	rig
Sugar Run, W H D Chapin (old)	rig
Cary, Duncan No 4 (old)	rig
Mack, Fisher Brothers No 19 (old)	rig

Quintuple.

3, P Kearns	600
25, E Strong & Co (old)	rig
44, J W Humphrey (old)	rig
174, D Atwater & Co	150
220, Clark, Stearns & Co (old)	rig

New rigs . . . 0
Old rigs . . . 17
Drilling . . . 4
Total . . . 21

Kendall Creek.

Melvin, P C L & P Co No 85 (old)	rig
do do do No 86 (old)	rig
do do do No 87 (old)	rig
Borden, Urquhart & Lavens (old)	rig
Norton, Dan Clark No 3 (old)	rig
do do do No 4 (old)	rig
Irons, Carter (old)	rig
Dodge, Dodge & Carter (old)	2 rigs
Mack, J A Logan & Seekins	1000
Willets, I Willets (old)	rig

New rigs . . . 0
Old rigs . . . 10
Drilling . . . 1
Total . . . 11

Foster Brook.

E T Co, Boyne, Penny & Coleman No 11 (old)	rig
do F L Blackmarr & Post No 5 (old)	rig
do R W Evans (old)	rig
C B & H, Watson Oil Co No 33 (old)	rig
do do do No 34 (old)	rig
do Juter & Yager (old)	rig

New rigs . . . 0
Old rigs . . . 6
Well drilling . . . 0
Total . . . 6

Four Mile.

Van Campen Wm M Brown (old)	2 rigs
do Merrill & Perrin (old)	rig
do Geo Van Campen & Sons No 21 (old)	rig
do Geo Van Campen & Sons No 22 (old)	rig
do Cleveland Oil Co No 5 (old)	rig
do do do No 6 (old)	rig
do Wm Doe No 4	drilling
do do No 5 (old)	rig
Waters, Griffin & Howard No 2 (old)	rig
C B & H, James Smith (old)	rig
Widow Carrol, Thomas Kervin No 9	drilling
do do No 10 (old)	rig
do Malloch & Griswold (old)	rig
Stevens, Coast & Curtis	900

New rigs . . . 0
Old rigs . . . 12
Drilling . . . 3
Total . . . 15

Indian Creek.

Barse, Union Oil Co (old)	rig
North Branch, J D Downing & Co (old)	rig
do do do (old)	rig
Keating, Forest Oil Co No 47 (old)	rig
Hamlin, Miller & Odell No 4 (old)	rig
Dodge, Shear Bros No 8 (fishing)	500
Zimmer, do No 2 (old)	rig
do do No 3 (old)	rig
Morse, Morse & Brown (old)	rig
Miles Loop, Union Oil Co No 25 (old)	rig
Keyes, Dan'l Keyes	rig bldg
Winchell, White & Young	500
Between Eldred and Olean, White & Co	rig

New rigs . . . 2
Old rigs . . . 9
Drilling . . . 2
Total . . . 13

Cole Creek.

Rew, Capt E Frawley (old)	rig
Bingham, lot 536 Union Oil Co (old)	rig
do lot 550 do (old)	rig
do lot 495 Union Oil Co & Forman (old)	rig
do lot 580 John McKeown No 14	1800
do lot 580 do No 15	rig

New rigs . . . 1
Old rigs . . . 4
Drilling . . . 1
Total . . . 6

Kinzua.

Bingham, Union Oil Co No 56 (old)	rig
do (C P & H pur) Emery Oil Co No 40 (old)	rig

Kinzua Village.

Warrant 5556, Schoonover & VanVleck	600
U O Co, Dr E A Van Scoy (old)	rig

New rigs . . . 0
Old rigs . . . 3
Drilling . . . 1
Total . . . 4

Warren and Forest.

Glade and Other Towns.

Tract. Operator.	Depth.
Wardwell, Benedict & Robinson No 12 (old)	rig
Cobham, Union Oil Co No 13 (old)	rig
Foster, Wesley Chambers No 1 (old)	rig
Kirwin, Clark & Foster (old)	rig
Irvine, T J Melvin No 4 (old)	rig
Sweating, J A Magee	rig bldg
Big Bend, Moore & Co	rig
John Mead, Beatty Brothers	drilling
Cobham, Union Oil Co No 19	1200
Copeland, Pagett & Co	100
H M Smith, Allen, Higgins & Co	1000
Morgenradt, (North Warren) Unknown	rig
J Fletcher, do Lacey, Hertzell & Co	rig
Marsh, J A Weible & Co No 2	1100
do do No 3	900
Cobham, Bruce & Co No 2	100
do The Pool No 17	600
do do No 18	650
do do No 19	700
do do No 20	400
J L McWilliams, Hayes, Gartlan & Co No 10	rig
A McWilliams, Roy, Pickett & Co No 8	100
Rogers, Book & Gartlan No 7	600
do do No 8	500
Brown pur, Anchor Oil Co No 4	450
Rogers, Murphy, Johnson & Co No 1	750
do do No 2	100
do No 2, Johnson & Anchor Oil Co No 1	700
do do Johnson & Anchor Oil Co No 2	600
do do Johnson & Anchor Oil Co No 3	rig
do (14 acres) Wesley Chambers	rig
do Barnsdall Brothers No 7	900
do do No 8	300
do do No 9	rig
do do No 10	rig
do do No 11	rig
do do No 12	rig
do do No 13	rig bldg
do Reid & Brenneman No 2	500
do do No 3	rig
Lot 460, Anchor Oil Co	1000
Lot 461, Otis Hoffman No 3	100
Lot 502, Adams, Story & Sargent	sand

New rigs . . . 13
Old rigs . . . 5
Drilling . . . 25
Total . . . 43

Clarendon.

Lot.	Operator.	Depth.
35,	(Mooney farm) Bell No 2 (old)	rig
54,	D Beatty & Son No 36 (old)	rig
78.	do do (old)	2 rigs
466,	Stoneham Oil Co No 3 (old)	rig
466,	D Riddlesperger (old)	rig
464,	Columbia Oil Co No 17 (old)	rig
464,	do No 18	rig
465,	Wm Pagett No 3	drilling
465,	W Benedict No 12 (old)	rig
106,	Golden & Co (old)	rig
107,	Fay & Lawton	drilling
107,	do do (old)	rig
108,	C H Filkins (old)	rig
162,	Etna Refining Co	drilling
495,	W W Ballard No 4 (old)	rig
494,	Patterson & Solliday No 11	rig bldg
526,	F G Keatley No 7	sand
529,	J C Goal No 3 (old)	rig
561,	F H Rockwell & Co No 13 (old)	rig
583,	do do do No 14 (old)	rig
582,	P A Gilbert No 1	sand
591,	Clark & Foster	rig
610,	Unknown	rig
670,	Holman	rig

New rigs 5
Old rigs 15
Drilling 5
Total 25

Tiona.

Lot.	Operator.	Depth.
75,	Fertig & Henne (shut down)	sand
59,	do (shut down)	sand
81	do	drilling
104,	Armor & Co No 2	drilling
109,	J S Patterson No 31 (old)	rig
109,	Schoublom & Townsend No 8 (old)	rig
110,	Fertig & Henne (old)	2 rigs
161,	Helm & Mealey	300
164,	do (old)	rig
164,	Hill & Powell No 4	200
165,	C H Coffin & Co No 2 (old)	rig
165,	Wm Paget No 17	rig
204,	Wheeler, Bovaird & Seyfang No 2	sand
204,	do do No 3	rig
204,	do do No 4	rigbldg
204,	Emerson & Farnsworth No 5	300
205,	Sage, Kelly & Ross	rig

New rigs 4
Old rigs and shut down 8
Drilling 6
Total 18

Cooper District.

Tract.	Operator.	Depth.
Lot 438,	Shank & Emery No 23 (old)	rig
E T Co,	Fertig & Henne (shut down)	500
3193,	Haight & Co	300

New rigs 0
Old rigs 1
Drilling 2
Total 3

Balltown.

Lot.	Operator.	Depth.
3194,	Porcupine Oil Co No 21 (old)	rig
3194,	do No 29	drilling
3195,	Emery, Agnew & Co No 6	rig
3195,	N F Clark No 2	1000
3195,	J A Gartlan No 6	200
4821,	Balltown Oil Co No 24 (old)	rig
4792,	Howe Oil Co No 16 (old)	rig
4792,	do do No 17 (old)	rig
5236,	May, Kelly & Grandin No 28 (shut down)	sand
5236,	do do No 29 (old)	rig

New rigs 1
Old rigs 6
Drilling 3
Total 10

Miscellaneous.

Elk Co,	Grant's Mills, O'Connor Bros	rig
Forest 3164,	J M Arters	100
do 3171,	(Marienville) Dilks & Co	1200
Elk 3662,	McDermott	rig bldg
Warren 5225,	Van Sycle	700
do 5223,	Vandergrift (old)	rig
do 5563,	Fredericks	rig
do	Kablay farm, Morck & Co	rig

New rigs 4
Old rigs 1
Drilling 3
Total 8

Lower Country

Venango.

Farm.	Operator.	Depth.
Diamond,	Manning & Darr	rig
do	W H Loots	rig
McCalmont,	P McCalmont	drilling
Kaufman,	A P Dale	rig
Flinchpaugh,	do	rig
Oberly,	J H Oberly	700
Mt Hope,	McCutcheon	sand

Vicinity Emlenton.

McCullough,	Porterfield & McCombs (old)	rig
do	Messer & Co	350
Fox,	J Martin (old)	rig
Richey,	E Crawford & Sons (old)	rig
Leslie,	Stevens & Co	200
Goodrich,	E Goodrich (old)	rig
J McGinnis,	McGinnis & Williams	sand
Weller,	J Weller (fishing)	700
Smith,	Weible & Boyce	rig
Bradley,	F F Black	150

New Rigs 5
Old Rigs 4
Wells drilling 8
Total 17

Clarion.

Clarion,	Clarion Gas Co	rig bldg
Troutner,	Unknown	rig

New rigs 2
Old rigs 0
Wells drilling 0
Total 2

Butler and Armstrong.

Wallace,	Fisher Bros No 9	700
do	do No 10	rig
Marshall	do	rig bldg
Barkley,	Phillips Bros	sand
Renfrew,	do	700
Crow,	S Christy	800
Weber,	P Schmick	rig
Henderson,	Johnson Bros	1000
Brown,	Bruce & Sutton	200
do	McTamany	rig
do	C Neely	rig bldg
Moyer,	A Shidemantle	100
Kirkpatrick,	Baldridge Oil Co (old)	rig
Butler,	Manufacturers' Gas Co.	500
Ribolds,	J J Painter (old)	rig
S Shaffner,	Wm Reed	sand
F Coch,	do (old)	rig
C Hinchberger	do (old)	rig
J Shaffner,	do (old)	rig
M Brown,	do (old)	rig
Zang,	Dennison & Co	100
Ritzert,	Showalter & Hartman	900
Martin,	C Widger	800
Kesselman,	Reed & Sutton	drilling
Hildebrand,	Fisher Bros	500
Kelly.	Hooks Bros	sand
do	Kelly & Co	500
do	Edmonds & Co	rig bldg
Diler,	W S Williams (old)	rig
Murrinsville,	Gilbert & Vanderlin	rig
do	do	rig bldg

New Rigs 8
Old Rigs 7
Wells drilling 16
Total 31

THE CANADIAN OIL REPORT.

The Petrolea *Topic* of September 5th says: There has been no change in the crude position since our last report to brighten the prospect for a realization of the long cherished hope of the producer for better values. Prices remain about the same as at last report, 85 cts. f. o. b.

The refined market is active, as the appended shipments will show. The demand seems to have set in more early this year than last, the output for 1884 being considerably larger than for the corresponding month of 1883. Quotations remain the same, 13½ cts., but there are rumors of a coming increase. There is a strong competition on the market in regard to quality of oil, each refiner trying to rival the other in the favor of the consumers. This is bound to result in great advantage to the trade generally by securing a stronger hold upon our own market.

Great bodies move slowly is, we suppose, the reason why the agency scheme of the producers is not being more rapidly developed. It would seem that the only thing that can be done to remedy the present state of affairs is to starve the producing business into shape. The trouble is apparently too weighty to be grappled by the producer.

The shipments of crude and refined, and distillate reduced to crude equivalent, for the month of August, were: G. T. R., 52,505 bbls.; M. C. R., 16,000 bbls.

WILLIAM S. BALDWIN, the popular General Passenger Agent of the B., N. Y. & P. R., has resigned and accepted the position of General Passenger Agent of the Louisville, New Albany & Chicago Railway, with headquarters at Chicago. The *Railway Guide* will continue to be published at Buffalo under his supervision.

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	JULY, 1884. Wells.	Prod'n.	Dry.	AUGUST, 1884. Wells.	Prod'n.	Dry.
Scio	1	6	0	1	10	0
Alma	13	93	2	2	5	1
Wirt	2	0	2	4	29	0
Bolivar	7	64	0	7	62	0
Clarksville	4	30	0	1	10	0
Genesee	1	12	0	0	0	0
Miscellaneous	0	0	0	1	0	1
Total	28	205	4	16	116	2

BRADFORD FIELD.

Division of Field.	JULY. Wells.	Prod'n.	Dry.	AUGUST. Wells.	Prod'n.	Dry.
E. & W. Branches	10	82	0	6	37	0
Kendall Creek	3	26	0	3	26	0
Foster Brook	0	0	0	1	10	0
Four Mile	4	36	0	4	38	0
Indian&Meeks Cr'ks	4	22	1	4	23	1
Cole Creek	7	235	0	4	190	0
Kinzua	3	50	1	5	27	2
Total	31	451	2	27	351	3

WARREN AND FOREST.

District.	JULY. Wells.	Prod'n.	Dry.	AUGUST. Wells.	Prod'n.	Dry.
Glade	43	7266	4	57	2400	4
Clarendon	16	102	0	8	68	0
Tiona	7	45	0	2	18	0
Cooper	10	126	1	1	10	0
Balltown	8	575	1	3	110	0
Miscellaneous	6	0	6	8	0	8
Total	90	8114	12	79	2606	12

LOWER COUNTRY.

District.	JULY. Wells.	Prod'n.	Dry.	AUGUST. Wells.	Prod'n.	Dry.
Venango	17	163	3	12	65	2
Clarion	2	5	1	3	19	0
Butler and Armstrong	20	522	6	12	230	2
Total	39	690	10	27	314	4

GRAND SUMMARY.

District.	JULY. Wells.	Prod'n.	Dry.	AUGUST. Wells.	Prod'n.	Dry.
Allegany	28	205	4	16	116	2
Bradford	31	451	2	27	351	3
Warren and Forest	90	8114	12	79	2606	12
Lower Field	39	690	10	27	314	4
July Total	188	9460	28			
August Total	149	3387	21	149	3387	21
Difference	39	6073	7			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	0	12	1	13	0	13	0	13
Alma	0	14	2	16	3	12	2	17
Wirt	1	6	4	11	0	4	3	7
Bolivar	5	13	6	24	4	13	2	19
Clarksville	0	4	0	4	0	3	0	3
Genesee	0	17	0	17	1	16	1	18
Miscellaneous	0	1	1	2	0	1	1	2
Total	6	67	14	87	8	62	39	79

BRADFORD FIELD.

Division of Field.	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	2	17	6	25	0	17	4	21
Kendall Creek	0	11	2	13	0	10	1	11
Foster Brook	0	6	1	7	0	6	0	6
Four Mile	0	17	3	20	0	12	3	15
Indian Creek	2	8	4	14	2	9	2	13
Cole Creek	2	3	3	8	1	4	1	6
Kinzua	0	3	6	9	0	3	1	4
Miscellaneous	0	0	0	0	0	0	0	0
Total	6	65	25	96	3	61	12	76

WARREN AND FOREST.

Division of Field.	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	12	11	44	67	13	5	25	43
Clarendon	3	16	6	25	5	15	5	25
Tiona	1	10	1	12	4	8	6	18
Cooper	1	1	0	2	0	1	2	3
Balltown	3	4	5	12	1	6	3	10
Miscellaneous	2	1	5	8	4	1	3	8
Total	22	43	61	126	27	36	44	107

LOWER COUNTRY.

Division of Field.	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	0	5	9	14	5	4	8	17
Clarion	0	0	3	3	2	0	0	2
Butler & Armstrong	7	4	17	28	8	7	16	31
Total	7	9	29	45	15	11	24	50

GRAND SUMMARY.

Field.	AUG. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	6	67	14	87	8	62	9	79
Bradford	6	65	25	96	3	61	12	76
Warren & Forest	22	43	61	126	27	36	44	107
Lower Country	7	9	29	45	15	11	24	50
Total Aug. 1	41	184	129	354	53	170	89	312
Total Sept. 1	53	170	89	312				
Difference	12	14	40	42				

THE Bradford runs for August are 936 barrels and the Allegany runs 730 barrels a day less than the runs for July.

HOLMAN & Co. are drilling a test well directly west of the old Landsrath failure on lot 668, and east of the Cherry Grove development.

THE new oil town that is budding into existence in the Baldridge field, is to be known as Phillips City. At present it consists of a school house and two shanties that have been converted into telegraph offices.

A WILDCAT well is going down near the Big Bend, on the south side of the Allegheny river, below Kinzua Village. This section of the country is very attractive to the wildcatter, notwithstanding several dusty failures that mark similar attempts in the past. North of the river rigs are up on Warrants 5563, 5564 and 5565.

THE total exports of Russian petroleum from Batoum for the year 1883 were 3,729,220 gallons refined, 5,416,487 gallons of lubricating and 3,357,454 pounds of crude. Constantinople imported 380,000 gallons Russian oil and 2,019,840 gallons American oil in 1883. Our refined oil is able to successfully compete with its Russian rival in the ports nearest the realm of the Czar.

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, JUNE, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., AUGUST 5, 1884.

CUSTOMS DISTRICTS.	MINERAL CRUDE.		NAPHTHAS.		ILLUMINATING.		LUBRICATING AND PARAFFINE OIL.		RESIDUUM.		TOTAL.	
	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.
Boston & Charlestown, Mass.	.....	....	150	75	345,048	36,777	9,496	2,703	.....	....	354,694	39,555
New York, N. Y.	5,771,231	438,652	1,526,360	129,239	32,541,035	2,964,888	733,464	163,465	677,166	46,158	41,249,256	3,742,402
Philadelphia, Pa.	254,128	19,530	.....	....	8,651,662	742,669	46,940	8,818	.....	....	8,952,730	771,017
Baltimore. Md.	.....	....	.....	....	2,187,770	182,862	.....	....	.....	....	2,187,770	182,862
San Francisco, Cal.	.....	....	15,100	3,439	26,120	4,771	.....	....	.....	....	41,220	8,210
All other districts.	.....	....	1,804	219	120,314	13,147	2,673	822	126	9	124,917	14,197
Total for June 1884	6,025,359	458,182	1,543,414	132,972	43,871,949	3,945,114	792,573	175,808	677,292	46,167	52,910,587	4,758,243
Total for June 1883	4,725,420	355,940	1,275,117	106,441	40,465,360	3,613,614	830,322	181,739	626,850	47,352	47,923,069	4,305,086
Total for 12 months, ended June 30, 1884	467 186,329	5 302,974	15,045,411	1 072,651	415,625,693	38,195,349	10,515,535	2 179,595	5,297,124	352,679	513,670,092	47,103,248
Total for 12 months, ended June 30, 1883	352 712,306	3 914,941	17,070,537	1 302,286	419,821,081	36,926,574	10,182,342	2 326,632	6,145,356	442,646	505,931,622	44,913,079

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	Aug. 23. 1884. Barrels.	July 26, 1884. Barrels.
London	285,579	255,570
Trieste	72,963	75,163
Seven Continental Ports	1,872,256	1,881,042
Total Stocks afloat and ashore	2,230,798	2,211,775
Increase in Stocks since July 26		19,023

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS AUGUST 23, 1884.

	Stocks W'k end'g Aug. 23.		Stocks Afloat W'k end'g Aug. 23.		Unloading W'k end'g Aug. 23.		Grand Total Stocks Afloat & Unloading.		Receipts. From July 1, 1884.		Shipments From July 1, 1884.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	442,765	228,807	45,570	29,472	7,000	27,300	495,335	285.579	122,013	55,377	53,860	58,070
Trieste	21,604	46,649	29,205	22,814	24,000	3,500	74.809	72,963	17,202	14,018	13,323	8,335
Bremen	917,548	852,855	36,657	13,451	52,500	11,000	1,006,705	877,306	112,122	170,012	89,201	113,738
Hamburg	314,953	259.745	45,605	72,467	32,000	65,500	392,558	397,712	151,290	222,268	169,444	135,068
Antwerp	257,533	213,661	72,471	15,586	71,500	79,500	401,504	308,747	137,921	184,843	90,766	96,972
Rotterdam	77,898	69,147	5,401	...	10,600	...	93,899	69,147	24,866	33,536	21,104	26,761
Amsterdam	53,813	54,748	19,357	1,225	10,000	7,500	83,170	63,473	51,996	38,702	35,021	26,964
Stettin	69,970	76,802	38,791	35,885	30,700	5,500	139,461	118,187	30,129	71,047	28,530	35,863
Danzig	13,114	20,786	...	16,898	9,500	...	22,614	37,684	7,162	19,118	10,012	6,791
Total	1,704,829	1,547,744	218,282	155,512	216,800	169,000	2,139,911	1,872,256	515,486	739,526	444,078	442,157

	1881.	1882.	1883.	1884.
Total stocks exclusive Trieste	1,179,387	1,963,738	2,147,594	1,776,551
Total afloat, exclusive Trieste	352,785	317,675	263,852	184,984
Total unloading, exclusive Danzig, London and Trieste	362,700	198,800	223 800	196,300
Total	1,894,872	2,480,213	2,635,246	2,157,835
Afloat and unloading for direct Continental Ports	....	....	....	38,000
" " " Baltic Sea, exclusive Stettin and Danzig	12,000	....	27,000	10,600
" " " English harbors, exclusive London	83,500	41,500	148,500	56,200
Grand Total	1,990,372	2,521,713	2,810,746	2,262,635

CRUDE QUOTATIONS FOR AUGUST, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Highest.	Lowest.	Closed.	Oil City. Opened.	Highest.	Lowest.	Closed.	New York. Opened.	Highest.	Lowest.	Closed.	Pittsburgh. Opened.	Highest.	Lowest.	Closed.
F	1	73¾	78½	73¾	76⅞	74⅛	78¼	74⅛	77	72⅞	78⅛	72⅞	77⅛	74	78⅛	74	77
S	2	77½	79	76⅜	77⅛	78	79¼	76⅜	77⅛	77⅝	79½	76⅜	76⅞	78½	79⅜	76⅜	77
M	4	76½	76¾	74½	74⅝	76¾	76¾	74½	74½	77	77	74½	74½	77	77	74⅝	74⅝
T	5	74¼	78	73	77¾	74	78	72⅞	77⅞	74	78	73	77⅞	73⅛	77⅞	73	77¾
W	6	78	78⅞	76	76⅞	78¼	79½	76½	76¾	78½	78⅞	76½	76¾	78	79	76⅝	76⅞
T	7	76½	80½	75⅞	80¼	76⅝	81	75¾	80½	76½	80⅝	75¾	80⅛	77¾	80⅜	75¾	80⅛
F	8	81	81	79	79	80½	80½	78⅞	78⅞	80⅛	80½	79	79	80⅜	80⅜	79	79
S	9	78¾	81	78¾	79⅞	78½	81	78¼	79⅞	78¾	80⅞	78⅞	79⅝	78½	81	78½	79¾
M	11	79⅝	79¾	77	78⅛	79⅜	79⅞	77	78⅛	79½	79⅞	76⅞	78¼	79⅞	79⅞	77⅛	78⅛
T	12	78	79⅞	77½	78⅛	77½	79⅝	77½	78⅛	77¼	79⅞	77½	78⅛	78	79¾	77½	78¼
W	13	78⅛	79⅜	77⅞	78¼	78	79⅛	77¾	78⅛	78¾	79⅛	77¾	78¼	78¼	79⅛	77⅞	78¼
T	14	79¼	79⅜	76⅞	77⅛	78¾	79¼	76⅞	77	78½	79¼	77⅛	77⅛	78½	79⅛	77	77
F	15	76½	77¼	76	76⅛	76¼	77¼	76	76⅛	76¾	77¼	76¼	76¼	76½	77⅛	76⅛	76⅛
S	16	76	77⅜	76	76½	76	77⅜	75⅞	76½	76	77¼	75⅞	76½	75⅞	77⅜	75⅞	76½
M	18	76	76½	75½	76⅛	76	76⅝	75½	76⅛	76⅛	76⅝	75⅝	76½	76¼	76⅝	75½	75⅜
T	19	76⅜	79	76⅜	78⅝	76½	79⅛	76½	78¾	76⅛	79	76⅜	78⅝	76½	79⅛	76½	78¼
W	20	79	80⅞	79	79½	78⅞	81	78⅞	79½	79⅛	81	79⅛	79⅝	79⅛	80⅞	79⅛	79⅝
T	21	79⅞	82⅝	79⅞	82⅝	79½	83	79½	82¾	80	82½	80	82½	79¾	82⅝	79¾	82½
F	22	84	85½	84	85¼	83½	85⅝	83½	85¼	83½	85½	83½	85¼	84¼	85½	84½	85¼
S	23	86	86⅜	84⅞	84⅞	86½	86¾	84¾	84⅞	85½	85½	84⅜	84⅞	85¾	86¼	84⅞	84¾
M	25	84¾	89	83½	89	84½	89	83⅜	88⅞	84⅜	89	83½	88⅞	84¼	88⅝	83½	88⅝
T	26	90¾	93½	88⅜	89⅝	90	93¼	88¾	88¾	90½	92⅞	88¼	88⅞	90¼	93	88¾	89¼
W	27	88¾	89⅞	87⅝	88½	89¾	90⅛	87¾	88⅝	89	90⅛	88	88⅝	89½	90	87⅝	88½
T	28	88¾	92	88¾	92	89	92½	89	92⅜	88¼	92¼	88¼	92¼	89	91¾	88⅝	91¾
F	29	92½	92½	90½	90⅞	92¼	92¼	90⅝	90⅞	93	93½	90½	90¾	92¼	92¼	90⅞	90⅞
S	30	91	91⅝	89⅞	90¾	90¾	91⅝	89¾	90¾	90⅞	91¾	90⅛	90¾	91	91⅛	89⅞	90⅝

THE MACKSBURG FIELD IN AUGUST.

The vibration of the drill in the Macksburg field during August closed the country to the eastward against an extension of the old development in that direction. A line of dry holes extends from the Union Oil Co.'s duster on the Neptune farm, below Middleburg, for three miles to the southward. Twelve wells were completed in August, having an estimated new production on the last day of the month of 99 barrels. Five of the 12 wells came in dry. Gilchrist & Co.'s well on Newell Run, Washington county, is reported a failure. T. N. Barnsdall is drilling an important test well on lot 21, in Enoch township, about three miles north of the Denman well. Macksburg has attracted but little attention during the past sixty days, but perhaps quite as much as the magnitude of the field warrants. The National Transit Co. have lately stationed one of their oil buyers, Mr. J. W. R. Attleberger, at Macksburg, where they are paying fifteen cents above oil region prices for the Buckeye crude.

The following is a list of wells completed during August:

WELLS COMPLETED AUGUST, 1884.

Farm. Operator.	Barrels.
Atkinson, Decker & Sons	8
Crawford, Borckman & Laney Bros No 3	6
" " " No 4	15
George Rice, George Rice est	8
Coal lands, Ohio Coal Co	15
Perkins, C J Garvey est	12
G Stevens, Mills & Mullin	35
Gilmore, George Nesbitt	dry
Morris, Union Oil Co	dry
Miller, McDonald	dry
Armstrong, D W Clark & Co	dry
Newell Run, Gilchrist & Co	dry
Wells	12
Production	99
Dry	5

The appended list gives the rigs up and building and wells drilling September 1st, 1884:

WELLS DRILLING SEPTEMBER 1, 1884.

Farm. Operator.	Depth.
George Rice, George Rice	1200
Schilling, Syndicate No 2	500
Gordon, " No 3	rig
Pod Stevens, Mills & Mullin	300
Patton, "	rig
Hobbs, St James Oil Co	drilling
Kathary, Kathary	drilling
Clindinn, C J Garvey	rig
Marke, Decker & Co	rig
Perkins, J C Lineman	rig
Atkinson, D W Clark & Co	drilling
Schilling, Austin & Mills	rig
Near Harrietsville, Geo Nesbitt	rig bldg
Near Warren, W E Brown	rig
Moss Run, C J Garvey	rig
Fifteen Mile, Coast & Rice	rig
Greenberry Stevens, Mills & Mullin No 2	rig bldg
Clark, " " No 2	rig bldg
Near Dexter, Unknown	drilling
Enoch township, Barnsdall & Co	drilling
Rigs	12
Drilling	8
Total	20

On the first of August there were 13 rigs up and building and 15 wells drilling, making a total of 28. While the shut-down has not been inaugurated in Macksburg, the operators appear to be falling into line.

SEMI-MONTHLY RECORD OF FIELD OPERATIONS.

The count which was made by experienced and reliable hands, for David Kirk, Esq., Manager of the Executive Committee of the Associated Producers, showed that only 40 wells were completed during the first 15 days of the month of September. These wells had a new production on the 15th day of the month of 2,248 barrels. In the aggregate, the Phillips was rated at 1,300 barrels.

WELLS COMPLETED SEPT. 1 TO SEPT. 15, 1884.

Field.	Wells.	Production.	Dry.
Allegany	1	10	0
Bradford	3	115	0
Glade	15	625	3
Clarendon	5	27	1
Tiona	2	12	0
Balltown	2	80	0
Venango	6	44	0
Butler and Armstrong	6	1335	0
Total	40	2248	4

The appended table gives totals of new rigs, old rigs and drilling wells in each section of the field, on the 15th inst.:

Field.	New Rigs.	Old Rigs.	Drilling.	Total.
Allegany	7	62	16	85
Bradford	5	59	14	78
Glade	5	8	20	33
Clarendon	3	16	4	23
Tiona	3	9	6	18
Cooper	0	2	2	4
Balltown	1	7	1	9
Miscellaneous	6	1	5	12
Venango	3	5	7	15
Clarion	1	0	1	2
Butler and Armstrong	14	5	20	39
Total Sept. 15	48	174	96	318
Total Sept. 1	53	170	89	312
Difference	5	4	7	6

On the 15th inst. there were five less new rigs, four more old ones which had been standing for 30 days or more, and seven less wells drilling. A comparison of figures indicates an increase of six in new operations. In the Allegany field one new well was completed during the first 15 days of the month. John McKeown finished a new well in the Bradford field, which started above 400 barrels.

The Phillips well, on the Bartley farm, at Baldridge, proved of remarkable size, and has developed wonderful staying qualities. For a number of days it held easily at 1,300 barrels.

On the evening of the 10th inst. a large iron tank containing 30,000 barrels of oil was struck by lightning at Olean, N. Y., and consumed. The tank was the property of the National Transit Co., and its registered number 847. The loss entails an assessment of seventy-one hundredths of a barrel on every thousand barrels of oil in the custody of the line at the time the tank was burned.

The Haight well, on Warrant 3,198, in the Cooper Hill section, is pronounced a failure.

AUGUST PRODUCTION REPORT.

Reports were received showing the amount of stocks at 6,083 Bradford wells August 1st, and 6,052 September 1st. On account of the sale of a number of wells, the same parties reported a smaller number September 1st. The wells August 1st gave an average of 55.6 barrels per well. The average on the first of September was 54.6. The figures compared show an average reduction per well of one barrel. The above figures are tabulated as follows:

Time.	No. Wells.	Gross Stocks.	Average per Well.
August 1, 1884	6,083	338,032	55.57
September 1, 1884	6,052	330,258	54.57
Difference	31	7,774	1.0

The number of wells in the Bradford field connected with the pipe lines Sept. 1st is estimated at 13,328. Presuming that the wells heard from afford a fair average for the field, the total stocks at wells in the Bradford district were decreased 13,328 barrels during August, a daily average reduction of 429 barrels. The daily average pipe line runs in the Bradford district by the National Transit and the Tidewater lines for August were 33,782 barrels. Subtracting the decrease in stocks, a fair estimate on Bradford's average daily August production would be:

	Barrels.
Average Daily Pipe Line Runs	33,782
Average Daily Decrease of Stocks at Wells	429
Bradford's Aug. production, est.	33,353
do July do do	34,031
do June do do	33,753
do May do do	33,922
do April do do	32,442
do March do do	31,912
do February do do	32,378
do January do do 1884	31,806
do December do do	34,470
do Novemb'r do do	35,026
do October do do	35,654
do Septemb'r do do	34,966
do August do do	35,085
do July do do	34,537
do June do do 1883	35,270

According to the above estimates, Bradford's August production fell off 678 barrels from the July figures. The cleaning out of old wells and changing of wells from flowing to pumping, has held the Bradford production nearly even when drilling was at a stand still.

THE ALLEGANY FIELD.

Reports of stocks in the Allegany field are tabulated as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
August 1, 1884	1,040	40,768	39.19
September 1, 1884	1,040	40,712	39.14
Difference	0	56	.05

The 1,040 Allegany wells from which stocks were received, show a decrease of $\frac{5}{100}$ barrels per well in August. Judging the entire field by the wells from which stocks were received, the August pipe line runs, 10,384 barrels, furnish a fair estimate of the production.

	Barrels.
Allegany's August production is estimated at	10,384
Allegany's July production is estimated at	11,218
Allegany's June production is estimated at	11,108
Allegany's May production is estimated at	11,547
Allegany's April production is estimated at	11,848
Allegany's March production is estimated at	11,768
Allegany's February production is estimated at	11,607
Allegany's January production is estimated at	11,263
Allegany's December production is estimated at	12,437
Allegany's November production is estimated at	12,678
Allegany's October production is estimated at	13,089
Allegany's September production is estimated at	12,335
Allegany's August production is estimated at	12,264
Allegany's July production is estimated at	12,345

WARREN, FOREST AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Warren, Forest and the Lower Country. The number of wells on the first of each month, with their averages, are contained in the following statement:

Field.	No. Wells. Aug. 1.	No. Wells. Sept. 1.	Average per Well. Aug. 1.	Average per Well Sept 1.
Clarendon & Tiona	126	127	53	57
Cherry Grove	58	50	101	94
Cooper District	172	172	106	130
Lower Country	80	80	61	64
Miscellaneous	143	146	169	184

The average daily pipe line runs from the Wardwell district during August were 6,483 barrels against 4,277 in July. Accepting the outside runs, which are partially made up of the Wardwell runs, as representing the production, an estimate on the yield of the field for July and August would be as follows:

Field.	August. Barrels.	July. Barrels.
Allegany	10,384	11,218
Bradford	33,353	34,031
Outside runs	22,830	20,870
Total	66,567	66,119

The above numerals show an increase in the production of the entire region of 448 barrels during August. In these estimates no account is taken of the "dump oil" loaded on the cars direct from the wells at Emlenton and other points along the Allegheny river.

THE Phillips well, on the Bartley farm, Baldridge, which has exercised such a depressing influence on the market for several weeks, is remarkable alike for the amount and uniformity of its flows. When first drilled into the sand on the 31st ult., it started at 350 barrels. Deeper drilling served to increase its output, and since the first of the month it has been flowing very regularly at from fifty-five to seventy-five barrels an hour. There is some salt water, the amount of which, as shown by a careful test, is about $3\frac{7}{10}$ per cent. of the production.

ON September 12th, A. M. Bowser, under ten years sentence for the killing of Haymaker, at Murraysville, was released on $15,000 bail pending application to the Supreme Court for a new trial.

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THE PETROLEUM AGE.

Vol. III. BRADFORD, PA., OCTOBER, 1884. No. 9.

THE SHANNON MYSTERY.

As long ago as 1876, Marcus Hulings, whose name for years was the synonym for success in the wildcat field, was drilling for oil in Forest county, on the banks of the Tionesta creek, near the unpretentious collection of two houses, a barn and a school house, known to the world as Foxburg. A dozen years before Hulings entered the region a well had been sunk in the same locality, but its depth was too shallow to furnish any practical results. Drilling was done by power from an old-fashioned mill wheel, moved by the slow-going waters of the Tionesta creek. The wreck of the old saw mill remains to mark the era of Foxburg's greatest prosperity, long since passed away to return no more. The Huling's well was sunk to the proper depth and discovered a vein of crude which, rich enough to excite the mind of the Foxburg hunter and bark-peeler, and to supply him with endless suppositions, as to the probable future that fate had in store for this obscure neighborhood, was yet too small to give a substantial reward to the practical oil operator. The old derrick at this well still raises its decaying form against the elements, and the yellow crude bubbles up from the depths below. The successful wildcatter, satisfied with what he had accomplished in this region, abandoned his Foxburg ventures and turned his attention to more exciting enterprises in the Bradford field.

C. A. Shultz, an itinerant piano tuner, who claims Sweden as the land of his birth, next appeared upon the scene, and taking his cue from the indications supplied by the Hulings well, interested Fred. Morck, a prosperous jeweller of Warren, in his schemes, and leased the Fox estate and other contiguous lands. A number of wells were drilled under the direction of these men, in a vain attempt to discover the productive pool whose existence the Hulings venture was supposed to mark. A momentary ripple of enthusiasm was created by the discovery of the Blue Jay and the Green & Darling wells, but several dry holes in quick succession dissipated their budding hopes, and the Morck & Shultz leases soon became a drug on the market.

Warrant 2991, of Howe township, which has since become famous as the Cooper tract; was numbered among their leases at one-fourth royalty. The two Darling wells, both very small producers, were situated on lot A, near the southeast corner of the tract and northwest of the Hulings venture. In order to satisfy the conditions of the lease, it now became necessary to sink a well near the western end of the warrant. Cherry Grove was at the zenith of its greatness, oil was down in the fifties, and wildcat operators were disposed to look with suspicion upon any lands in the despised Blue Jay region. J. T. Larmouth, of Jamestown, was induced to look with favor upon the representations, of Messrs. Morck & Shultz, and leased lot D, of one hundred acres, but he soon became discouraged and threw up the lease. It was then taken by Mainwaring, who built the rig which afterward drilled the famous Shannon well, but he too lost faith and failed to make the test.

It was at this stage of affairs that the owners of the Forest county leases met Mr. P. M. Shannon of Bradford. Discouraged by their past experience, they were ready to make the most favorable overtures, and Mr. Shannon was speedily made happy by the possession of the necessary legal papers that bound him to drill a well on lot D, in the western end of the Cooper tract. Messrs. A. B. Walker and T. J. Melvin, two well-known Bradford operators, joined Mr. Shannon in this venture. The summer months of 1882 were improved in cutting a road up precipitous Cooper Hill and through the dense forest from the Foxburgh farm house to the southwest corner of the warrant, where the Mainwaring rig had already been erected. A boiler and engine were dragged to the spot, placed in position, and the drill began to pierce the rocky covering that concealed the secret resources of the earth.

Among the many mysteries with which the trade was afflicted in the year 1882, none were more conspicuous than the Shannon well on the Cooper tract. It was located in the sunless woodland, at the head of a small ravine, through which a tiny stream gurgled and tumbled over rocks on its way to the Tionesta, which "sang" a half mile below. The news of the well reached the public about the first of August. At this

time Cherry Grove's spouters were deluging the world with oil, and the visual range of the spectacular eye was not easily widened beyond the narrow limits of that famous pool. The well was remote from the lines of travel, the nearest telegraph office being eight miles away, and the news of the strike was slow in finding its way to the centres of speculation.

Having no elevations on the well except those reached through the use of an Aneroid barometer, the contractor, Captain Haight, as well as the owners, were at a loss to determine the exact depth of the Sheffield or Blue Jay sand. The feelings which animate the breast of a wildcatter are not unlike those of a man who holds a ticket in a lottery just previous to the drawing. Messrs. Melvin & Walker had fished for trout in shaded streams about Foxburg while waiting for the drill to find a lower level at the well. They gave the well up as a failure on July 25, after a depth of more than 1,800 feet had been reached, and went to Cherry Grove to look after their other interests. Shannon, who has the genius of patience, remained to watch the drill travel to a greater depth. His letter written to his absent partners read as follows:

COOPER TRACT, *July 26, 1882.*

Melvin & Walker:

Come at once. Struck sand at one p. m. Put both plugs in at once and filled her up with water. At three she commenced flowing over derrick. Can't stop her. She is a "teaser." Bring two or three as large plugs as you can get, and hurry here. Have guards out and done everything possible to stop her.

Yours, &c,,

P. M. SHANNON.

P. S.—Mr. Shultz will explain.

Shultz, the tall and erect Swede, wore "oil man's boots," but in everything else pertaining to the business he was a novice. All who came in contact with him or heard his line of conversation during the days of the siege at the Shanon well, had no doubt about his being thoroughly embued with the importance of the mystery in which he was interested. He arrived at Sheffield on the evening of the eventful day, with joy in his heart and a delicious burden on his mind. The roar of gas and oil at the well made pleasant music to his finely attuned ear. Mr. Walker, who was at supper, was escorted beyond the limits of the village, when the story of crude wealth was unfolded by the jubilant Swede.

The news of the strike found its way slowly through the columns of the oil region press to the general trade. Prior to August 1st, the well was not mentioned by the Bradford papers. On that date the following message was published in the *Era* concerning the well, which it was thought would fall with crushing force on the market:

"A telegram was received at Warren this evening, stating that the well on the Cooper tract, west of the old Darling well, is doing 100 barrels natural."

August 2d, in the same paper, this message was published: "Shannon and others well on the Cooper tract, two miles west of the old Darling well, Forest county, is showing for a small natural well. It is a very heavy gasser and throws out oil as fast as it comes in. There are two dry holes between this and the Darling well."

When the sand was struck, every effort was made to shut off the oil by means of wooden plugs. The two which had been brought to the derrick were lowered and driven to the bottom with the tools. During the process of plugging the pent-up pressure of gas and oil forced the heavy tools, which were being lowered, out of the well with a loud report Messrs. Haight and Shannon, who were in the derrick at the time, had a narrow escape as the tools fell crashing through the roof and floor of the derrick. The heavy flows following the expulsion of the tools led the owners to oversize the well. Wells in the Bradford district of a ten-barrel calibre, after being torpedoed, have been known to lift the tools above the derrick floor. All efforts to shut in the oil failed. At least ten plugs were put in the well, making a vertical section of wood of about forty-five feet. Sediment, old clothing and everything about the isolated derrick was used to stop the flow of crude, in order that the true inwardness of the well might be concealed. The oil which could not be be shut back found its way down the small ravine to the Tionesta. Gauging the oil which flowed down this creek furnished a very unsatisfactory basis for an estimate on the production of the well. Still, the crude was sufficient in volume to show that a profitable producer would result from the venture.

There are two histories to every mystery. One as seen by the owners and given out to the public to suit their position on the market, the other as recorded in the terse telegraphic cipher of the scout. The Shannon was the most carefully guarded of any mystery that ever agitated the oil trade. As soon as possible after oil was struck

a line of outposts was established at convenient distances from the well. Small huts were constructed of hemlock boughs and bark. The underbrush was carefully cleared from one post to the other, so that the line of sight was unobstructed and no convenient brush heap might furnish a hiding place for the lurking scout. Guards were changed every six hours, and each man was armed with a Winchester repeating rifle. Since intruders were only liable to arrest for trespassing, it is not quite plain why a feature was introduced which might have resulted in an accident of a sombre cast. When all arrangements were perfected the Shannon well became an intrenched camp surrounded by a besieging army of a half dozen scouts.

It is claimed and the fact is not disputed, that this was the first well guarded in military style. Various seductive influences were brought to bear on the guards in the endeavor to induce them to impart any information which they might have gained. But to their credit it may be said that it is not known that any of them proved false to their trust. Their language in warning people from the grounds was emphatic, but it would not be called elegant outside of Gusher City or Balltown society. Up to the close of their long vigil they had not been allowed to leave the well, and some of them possessed more money when they were paid off than they had held at any one time before in their lives. It was the genius of Shultz that impressed upon each Shannon guard the importance of his mission and the necessity for the most most careful watch and ward. It was the military experience of Captain Haight that transformed a wildcat well into a beleagured citadel under strict discipline, surrounded by hostile foes. During the first weeks of guarding every crackle of a twig or hoot of an owl was followed by an indiscriminate discharge of musketry. Leaden bullets whizzed their harmless way through the tree tops whenever an anxious guard imagined the presence of a dreaded scout, and Commander-in-chief Shultz was kept busy molding balls and supplying his Falstaffian recruits with ammunition.

The scouts made occasional visits to the well before they began to drill out the plugs, but after the drill was started for the purpose of cutting out these wooden obstructions, they timed every movement of the walking beam, and none left the well while it was in motion. One or two remained every night to watch, each man cheerfully taking the night tour when his turn came. Every morning at early dawn a half dozen scouts left Garfield on horseback and made their way across the woods to the surveyors' camp at the mouth of Sheriff Run, on Tionesta Creek. Here each man unloaded his bag of oats, tied his horse to a convenient tree and walked about two miles to the well. At noonday the scouts sat down for dinner under the hemlocks. A loaf of bread and a can of Boston baked beans, with lemons for vinegar, furnished them with the necessary materials for making that substantial luxury in the woods, a bean sandwich. At times the scouts would sleep on the hemlock boughs at the surveyors' camp at the mouth of the Sheriff, on the winding Tionesta. Under the cover of darkness it was a common and an easy thing for a scout to creep on all fours past the guard lines and to lie all night within splendid hearing distance of the well. Many nights during the year 1882, the boys who stood between the speculative trade and the mystery men, have watched the stars glitter through the hemlocks as they listened to the dismal midnight hoot of the owl. Reclining on a bed of hemlock boughs at the surveyors' camp, watching the silvery moonbeams toy with the mists which hung over the Tionesta, was far more pleasant than the damp ground in close proximity to an eluded guard at the mysterious well. One night Tennant and Rathbun remained to keep surveillance over the slumbering gusher. While Tennant was pulling himself over a dead log, a dry limb cracked. The guard whose guard house was nearest the point from which the sound came, fired. The bullet whizzed past the scout's ear. The next day there was considerable target practice in the vicinity of the well by the scouts, and from that time the guards omitted promiscuous firing during the nocturnal hours. The relations existing between scouts and guards were usually of a pleasant nature.

It has often been demonstrated that the speculative oil trade becomes absorbed in the contemplation of a single object which exerts a real or imaginary controlling influence on speculative values. Much more prone is the owner of a mystery to believe that the well under his immediate charge is the pivot upon which the crude factions are turning. The visual angle of a manipulator of wildcat wells is filled by his own derricks. The attitude assumed by the owners of the Shannon well toward the oil market beautifully illustrated the above statements.

Unable to see beyond their own venture, and having in their minds the example of 646, they sought

to play an autocratic role in the oil world. The market, under the weight of Cherry Grove's burden of crude, sold below fifty cents per barrel. On the 26th of July the lowest mark noted on the scale of prices was 60⅝ cents. The possibilities on the market and in the field disclosed by the opening of this well, induced the original owners to form a syndicate. Messrs. S. G. Bayne, J. M. Fuller, Chas. E. Parsons and C. C. Melvin became interested in land operations as well as speculation. In order to impel the fractions their way and use the new strike as a speculative lever, a number of heavy operators were taken into the confidence of the owners, who gave them what they honestly believed to be the inside and bottom facts of the supposed impending market-crusher. Many of these giants were heavy losers through information so kindly given.

One day at the close of the summer, the owners were riding under the shade of the hemlocks toward the mystery, as it was popularly called in Foxburg. They had dined sumptuously on bacon at the Fox farm house, were confident that the slumbering gusher would astonish the oil world by flowing at a 1500-barrel gait, and being in the best of moods as they neared the well, one of the owners remarked: "We have a jack pot here which we can open at pleasure." Were the details of speculation based on confidential and inside information of the Shannon well reduced to cold type in these pages, they would demonstrate that there were chances for losses in "sugaring off" a supposed sure thing. Putting out a large line of shorts they saw the market staggering under the unknown terrors of the Shannon well. Hugging the delusion that they had reduced speculation to a certainty, and that with the opening up of their gusher the scenes that followed the dawn of Cherry Grove would be repeated and oil once more go down into the forties, the confident syndicate, through active brokers, sold upwards of a million barrels of oil. Before the oil could be bought in, the great gushers of Cherry Grove had ceased to roar, and speculation was busy watching the fast ebbing flood of the latest and greatest of pebble sand seas.

For several weeks the production of the well was estimated by the scouts from timing the flows. The duration of each flow and the interval between flows were noted. It was found by experiment with the Cherry Grove gushers, that a well would put through two lead pipes, each having a diameter of two inches, from one and a half to two barrels per minute. The amount of gas has much to do with the quantity of the flow. To judge of this, personal experience enters as an important factor in arriving at a correct conclusion. The results obtained in this manner tallied with the gauges, which were made public after the well ceased to be a mystery. One Sunday morning, when the well was doing its best, Messrs. Parsons, Junker and Wm. Walker, who drilled out the plugs, came to the guard line where the writer and another scout, who happened to be on duty with him, were listening, as the poet Zedaker would poetically express it, to the tanks "battling with flowing oil." Mr. Parsons and his two aids heard the noise of the flowing, and returning to the tank house lengthened the lead pipes, so that the rush of crude from their ends no longer broke the stillness which brooded at times over this portion of Cooper Hill. As a last resort the ingenious scouts patiently watched the ventilators of the tank house for the appearance of gas. Every time the well flowed a volume of gas would emerge from the tank house. The interval between the periods of gassing could be carefully timed, and the average duration of the flows was already known. With the atmosphere in good condition and a strong field glass at hand, results sufficiently close for the purpose of speculation could be obtained. By these two methods fieldmen arrived at conclusions which served as correct guides for their principals in avoiding the short side of the market on account of the Shannon well.

The Shannon well struck the sand on the 26th of July, and was immediately plugged, as described above. The gas was too strong, however, and the well made periodical flows in spite of the precautions taken to check its productive power.

Pits were dug about the well to retain its crude output within the precincts of the line of guards, but the little rivulet that had its source in a large cool spring near by, was constantly bearing telltale evidences of its secret wealth to the outside world. Early in September everything seemed to be in readiness for drilling the plugs out of the well. Wm. Walker, brother of A. B. Walker, was selected to turn the temper screw, and Chas. Junker, the reliable superintendent of Bayne, Fuller & Melvin, dressed the tools. The four men who had drilled the well down to the producing rock had been discharged, and Junker and Walker were the only persons trusted inside the derrick. The remaining guards were totally ignorant of oil wells, and beyond a misty belief

that the well was of vast importance and bound to be a gusher of the first magnitude, they had nothing to give up to the artful inquiries of the scouts, even if they had been disposed. Drilling continued on the plugs at the well until September 14th, when everything was removed and a proper level reached. The well failed to respond as expected when the plugs were out and the sand cut deeper, and the speculators who tied their hopes to the Shannon mystery, at the best, were heavy losers, even after making a hasty scramble to cover their shorts. The scouts never estimated the well above 150 barrels, while the men who sold the market on inside tips thought it might do 1,500.

There are many incidents connected with the Shannon mystery which are omitted in this article for the want of time and space. P. C. Boyles' midnight ride on horseback down Tionesta Creek from the well to the Balltown road, the capture of a scout and his experience in the camp, with many other incidents, would furnish material for another article.

THE Macksburg dialect is a source of amusement to the Pennsylvania producer. The Buckeye granger has been dabbling a little in the business of oil producing for twenty-five years, and has developed a nomenclature peculiarly his own. He steps in a hardware store and tells the dealer "I want a three-way piece and a dip. I got a rope jacket last week, and if I could get an augerman I would rid out one of my wells next week. It was doin' right smart when it stopped." This might puzzle a Pennsylvanian for a second or two, but the Macksburg dealer in oil well supplies knows perfectly well that his customer wants a "tee" and a bailer, and that he already has a rope socket, and that if he could find a driller he would have one of his wells cleaned out.

IRON TANKS.

The storage capacity of the National Transit Company was increased 452,450 barrels in September by the construction of fourteen new iron tanks. The newly completed reservoirs are located as follows:

Location.	No. Tanks.	Capacity Barrels.
Olean, N. Y.	11	390,300
Saddle Run, N. J	1	36,500
Glade, Pa	1	21,950
Thorn Creek, Pa	1	3,700
Total	14	452,450

SPECIAL OFFER.

Vols. 1 and 2 of the AGE, neatly bound in cloth, with subscription to the end of Vol. 3, will be sent to any address for ten dollars.

TRACT MAPS OF ELK AND FOREST COUNTIES.

The second geological survey of Pennsylvania has just published two excellent tract maps of Elk and Forest counties. They are drawn on a scale of one mile to an inch, and prepared from the latest surveys of Mr. A. B. Howland, of Titusville, Hon. J. L. Brown, of Wilcox, Mr. E. E. Willard, of Ridgway, and those of the geological survey. The object in publishing these maps was to place in the hands of the oil operators of these two counties the most accurate map which it is possible to make at the present time, showing the relative positions of the townships, warrants and principal tracts. The names of the individual tracts have not been placed on the maps, since it is not the purpose of the State Survey to advertise, appreciate, or depreciate any individual interests, but to furnish reliable information as to the location of the boundary lines of the well known land divisions.

Mr. Chas. A. Ashburner, Assistant Geologist of the Survey, furnishes the following information in regard to these maps and other forthcoming publications of the geological survey:

"These maps will be published in an atlas of maps and sections to accompany my report on the geology of Cameron, Elk and Forest counties. All the sheets to be contained in this atlas are now completed and are in the hands of the State Printer ready for binding, and it is hoped that the atlas will be made available to the public in the course of two or three months. In addition to the Elk and Forest tract maps the atlas will contain the following: Separate geological maps of Cameron, Elk and Forest counties, showing the surface geology and the outcrop of the principal strata, on a scale of two miles to one inch; a map of Forest, Elk and Cameron counties on one sheet, showing the positions of the anticlinal and synclinal axes, scale six miles to one inch; sheet of oil well and surface sections along a line running from Smethport, in McKean county, to Driftwood, in Cameron county; a sheet of similar sections through Cameron, Elk, Forest and Venango counties, between the towns of Cameron and Franklin; one sheet of coal measure sections, showing the relation of the coal beds along a line from Alton, in McKean county, to Brockwayville, in Jefferson county; a map of McKean county, on a scale of two miles to one inch, showing the topography of the surface by contour curve lines 100 feet vertically apart. In addition to the contour curves this map is tinted in order to show the

relief of the hills and valleys; and finally a topographical map of the coal basin along the Clarion river in Jones township, Elk county.

It is proposed to publish this atlas in advance of my report, the manuscript of which is nearly ready to be sent to the State Printer, but which is to be held until the completion of about 125 sections of the coal measures which are now being constructed to be inserted in the text. It will not be many months before this report is published, but it is impossible now to state any definite time on account of the great pressure of work in the State Printer's establishment, which will necessarily delay its rapid publication.

In addition to the maps which shall be contained in this atlas, Mr. Carll and myself are preparing a map of Western Pennsylvania west of the escarpment of the Allegheny Mountains, on a scale of six miles to one inch, upon which will be represented all the streams according to the latest surveys and the outlines of all the petroleum districts as far as developed to July, 1884. This map is now in the hands of the State Printer being engraved, but will not be completed in time to be published in the atlas. It is proposed, however, to place it in the report.

At the suggestion of Hon. Samuel Q. Brown, Commissioner of the Second Geological Survey, it is proposed to publish a small edition of this map, which will be held for separate sale without the report, in accordance with the Act of Assembly which provides for the distribution of the edition of the Survey maps and reports which are published by the Board of Commissioners."

"RACKAROCK."

The following report has recently been made by the well-known writer upon mining matters, George G. Andre, M. E., Associate Member Inst. C. E., F. G. S., of London, upon "Rackarock" blasting powder:

LONDON, *June 12, 1884.*

Sir—I have made an analytical examination of the new explosive submitted to me, and carried out a series of tests for the purpose of ascertaining its properties and merits. The material upon which I experimented was made in accordance with the patent specifications of Silas Reynolds Divine. The results of the examination and tests are embodied in the following:

I. The "oxidant" is a stable compound in which the chemical affinities are satisfied. In other words, it is not liable to spontaneous decomposition, and is by nature non-explosive. As an ordinary article of commerce, and one in common use, its properties are well known. The "combustible" is also a well known substance. It is a refuse liquid of the hydro-carbon class, non-volatile at ordinary temperatures. Like the oxidant, it is a stable and non-explosive compound. To produce an explosive, these two substances must be intimately mixed. It is to be noted here that this explosive is a mechanical mixture of the gunpowder class, not a chemical compound of the gun-cotton and nitro-glycerine class.

II. As the mixing is effected by simply immersing the insoluble oxidant in the liquid combustible, no special skill or knowledge is required on the part of the workmen. The inventor, has, moreover, devised such means and arrangements for readily handling the two ingredients that the immersion may be as effectively performed by a child as by the most skilled operator. When mixed in this way, the explosive is in a form ready for use in blasting without further manipulation.

III. All explosives, mechanical mixtures as well as compounds, may be detonated by a blow or by friction; they differ in this respect only in the readiness with which they yield to such action. It is obvious that a liability to explode from such shocks, concussions or frictions, as may accidentally occur under ordinary conditions of transport and use must be fatal to the success of any explosive, whatever its merits might be in other respects. Hitherto all attempts to utilize the powerful oxidant of the compound under consideration in the manufacture of explosives, have failed in this direction; the products have been dangerous to handle. Having these facts in mind, I thought it necessary to submit your explosive to many and severe tests before forming an opinion as to its ability to withstand moderate friction and such shocks as it might be exposed to in charging the borehole; though it appears *a priori* from the nature of the combustible that it would be capable of resisting such influences. These tests consisted in dropping a heavy weight from various heights upon a cartridge laid upon a brass plate, and in dragging the weight across the plate upon which some of the explosive had been previously smeared. The results of these trials have been in the highest degree satisfactory. It appears then that the very serious defect of easy detonation possessed by all explosives of this class having a solid combustible, is absent from yours.

IV. As this explosive is a mechanical mixture, and as, moreover, its ingredients are stable compounds, variations of atmospheric temperature, even if extreme, cannot set up decomposition in it, as they may do in some explosives that are chemically combined, nor can they in any degree affect its efficacy or its safety.

V. The oxidant is a solid, insoluble in the liquid combustible. The latter is a common hydro-carbon not subject to freezing at ordinary temperatures. The explosive compounded of these two is therefore not liable to freeze, as nitroglycerine is, in the coldest weather.

VI. As the liquid combustible is not miscible with water, the compound may be used without protection in wet holes. This property of your explosive is a very important one, because it allows the charge to be used under the same conditions of exposure to water as dynamite.

VII. It follows from what I have said in paragraph III, that a charge of your explosive may be safely rammed home to fill the irregular space of the borehole, and it may be tamped as tightly as the nature of the detonator will permit. Being a plastic mass like dynamite, and of high specific gravity, it offers all the advantages of the latter explosive in filling the whole of the space into which it is forced, and in lying compactly together.

VIII and IX. The gaseous products of combustion are, in the case of your explosive, of a much less harmful character than in the case of dynamite and gun-cotton. They consist almost entirely of carbonic acid and water, and absolutely none of the nitrous fumes are formed which, with the latter compounds, cause nausea and headache. The smoke of combustion is small in quantity and of a character that speedily dissipates itself, and the gaseous products when diffused in the atmosphere of a close heading are scarcely perceptible, and harmless within a few minutes of the explosion.

X. If the strength of your explosive relatively to that of dynamite be estimated theoretically, that is, by comparing the volume of the gases of explosion, the former will be found to approximate very closely to the latter. In practice I have found them equal. Weight for weight, a charge of your explosive will perform the same work as dynamite of 75 per cent. nitroglycerine, a quality that was formerly known as No. 1. To get the full effect, however, it is necessary to tamp the charge. Strong tamping as for gunpowder is not needed, but some tamping I have found to be indispensable. To produce perfect detonation a strong detonator is required; those used for gun-cotton are very suitable. This fact is evidence of the safety with which the explosive may be handled, and should be considered in connection with those set forth in paragraph III.

The fact that some tamping being required with this explosive renders it as unsuitable as gunpowder for purposes of mischief. The possession of it is, therefore, not likely to be subjected to the same restrictions as are now imposed in the case of dynamite. This is a matter likely to be of some importance in the future.

GEO. G. ANDRE.

THE PRODUCTS OF PETROLEUM.

Crude petroleum as it comes from the wells is a mixture of solid paraffines and heavy oils with others almost gaseous. The products of distillation are given in their order:

	Specific Gravity	Boiling Point Deg. Cent.	Use.
Cymogen (butane) . .	.578–.603	0	Refrigerating.
Rhigolene	.603–.629	18	Anæsthesia.
Gasolene	.629–.673	. . . . .	Naphthalizing gas and in air gas.
Naphtha	.673–.723	. . . . .	As a solvent; also in oil cloths, street lamps, &c
Benzine	.723–.744	. . . . .	As a solvent and in paints, &c.
Kerosene	.744–.838	. . . . .	Illuminating oil.
Paraffine Oil	.838–.906	. . . . .	For lubricating.

The products then become viscid, and it is from these (the residuum) that the substance called "vaseline" is made.

N. W. AYER & SON'S *American Newspaper Annual* for 1884, published at Philadelphia, Pa., contains nearly 1,000 pages, and is a very useful volume for live business men. Besides a list of all newspapers and periodicals in the United States and Canada, it gives the population of every State, county and prominent town; the political majority of every State and county; the area, natural features, agricultural and manufacturing statistics of each State and county in the Union. It is unequalled for fullness, compactness of statement, variety and value of contents.

THE runs from the Baldridge district were 26,134 barrels in August, and 79,324 barrels in September. This increase, 53,190 barrels, mainly comes from the Phillips gusher. Allowing that the other wells in the district maintained their old production, 53,190 barrels represents thirty days runs from the Phillips well.

AT the office of the AGE will always be found reliable maps of the different oil fields.

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to Sept. 27, for the years 1883, 1884, were as follows:

	1884. Gallons.	1883. Gallons.
From Boston	5,258,915	3,632,998
Philadelphia	65,766,423	56,715,054
Baltimore	9,701,079	6,807,300
Richmond	....	173,449
Total	80,726,417	67,328,801
From New York	280,263,497	315,844,294
Total exports from United States	360,989,914	383,173,095

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to September 27th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
GREAT BRITAIN.—London	11,751,113	27,035,365
Liverpool	4,106,983	7,104,718
Bristol	1,948,596	2,018,234
Ireland	4,492,642	4,255,614
Other ports	4,498,981	4,768,851
GERMANY—Bremen	24,567,230	35,317,726
Hamburg	28,059,508	28,959,623
Konigsburg and Stettin	6,373,442	4,766,126
Dantzic	937,366	1,110,141
Other Ports	1,372,183	835,570
FRANCE—Marseilles	....	....
Havre	....	....
Norway and Sweden	5,228,403	7,189,009
Russia	188,822	1,539,156
Denmark	6,245,291	8,402,021
Belgium	22,658,327	31,755,895
Holland	12,835,383	11,950,110
Spain	350,960	142,770
Portugal	1,031,636	1,463,463
Gibraltar and Malta	3,147,780	1,807,438
Italy	1,771,111	1,815,856
AUSTRIA.—Trieste, etc	4,439,498	9,992,517
Greece	302,710	1,280,410
Turkey in Europe	2,276,390	2,825,121
Turkey in Asia	2,780,475	3,080,742
India	23,056,230	12,410,900
China, Japan, etc	18,075,020	20,242,670
East Indies	22,271,290	25,752,030
AFRICA.—Alexandria, etc. E	2,416,250	1,922,970
Canary Islands	113,059	111,845
Other Ports	2,691,400	4,596,489
Australia	1,813,344	1,369,124
New Zealand	606,270	516,460
Sandwich Islands	204,080	202,500
SOUTH AMERICA.—Brazil	3,904,016	4,361,985
Argentine Confederation	3,894,400	3,140,370
Chili and Peru	562,914	1,178,400
U. S. Columbia	315,384	242,660
Venezuela	510,191	493,082
Other Ports	53,300	114,461
Central America	202,866	143,132
Mexico	868,190	1,089,234
British North American Colonies	808,801	916,796
Cuba	357,421	186,664
British West Indies and Br. Guiana	1,200,830	1,326,300
Other West Indies	937,512	743,616
Total . . . . . Galls.	236,227,598	280,478,161

CRUDE.

	1884.	1883.
FRANCE.—Havre	6,707,614	7,254,937
Marseilles	3,794,109	2,622,902
Bordeaux	1,545,809	1,687,760
Dunkirk	5,466,114	5,006,052
Other Ports	7,558,441	5,772,438
Antwerp	....	....
Bremen	425,850	753,616
Norway and Sweden	....	62,374
Spain	9,261,236	9,116,314
Cuba	1,967,376	1,280,735
Other Ports	6,070,624	2,193,471
Total . . . . . Galls.	42,797,173	35,750,599

NAPHTHA.

	1884.	1883.
Great Britain	3,237,112	4,363,025
France	2,249,930	3,256,435
Germany	521,780	1,561,081
Other Europe	750,690	1,508,878
Various Ports	152,820	70,358
Total . . . . . Galls.	6,912,332	10,759,777

RESIDUUM.

	1884.	1883.
To all Ports	3,212,345	5,376,837

	Gallons.
Total Refined since January 1, actual shipments	239,902,620
do do do do crude equivalent	319,870,160
do Crude do do actual shipments	43,182,701
Grand Total Crude and Crude equivalent . . . . galls.	363,052,861
Same time, 1883	409,721,480

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, October 4th, 1884:

PORTS.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	34	34	18	5	2	93
Philadelphia	63	19	9	0	0	91
Baltimore	17	0	0	0	2	19
Boston	1	2	0	0	0	3
Total Oct. 4	115	55	27	5	4	206
Total Sept. 6	127	44	25	6	2	204
Difference	12	11	2	1	2	2

The vessels loading as above at New York represent a capacity of 230,900 barrels of refined and 1,141,000 cases of refined. The vessels loading at Philadelphia indicate a stowage of 369,800 barrels and 419,000 cases of refined.

CRUDE OIL FOR FUEL.

Miss Amanda T. Jones Experiments in Puddling Iron with Petroleum.

If a small part of the capital invested in the production of petroleum had been wisely expended in providing fresh channels and inventing new uses for its consumption, a shut-down movement would never have become a necessity to the trade. Russian petroleum is successfully used as fuel for steamboats and railway locomotives, but the American inventor has received but little encouragement for devices for its consumption for any other purpose than that of illumination.

Miss Amanda T. Jones, a lady well known to the residents of Bradford, has been engaged for some time in promoting the increased consumption of crude, by the introduction of her fuel petroleum burners in boilers and furnaces. She has made several successful experiments in applying her invention to smelting works at Boston and Cleveland. In an ordinary iron furnace, with no special arrangements to give her burner increased efficiency, she has made 60 gallons of oil do the work of 1½ tons of coal in getting ready for the charge, and furthermore completed the part of the work which usually required ten or twelve hours, in two and a half hours.

Like many other inventors, Miss Jones has struggled against discouragements and misfortunes that would have prostrated a less intrepid

and courageous soul. In Boston all arrangements had been completed to put her smelting furnaces into action, when suddenly the superintendent, who had taken great interest in her work, died. The mills soon after stopped and the company failed. After waiting several month she went to Cleveland. The Union Rolling Mill consented to have a puddling furnace built after her plan, but the same night she established herself in the vicinity of the mills they burned to the ground. When the works started up again she was permitted to take one of the puddling furnaces and fit it up for one day's run. In a recent letter, Miss Jones says: "I had to take the furnace just as it was, altogether unfit to show the beauty of my fire. It was not imagined by any man in the mill that I would heat the furnace." The editor of the *Iron Trade Review* describes this experiment and its results as follows:

The apparatus itself is quite simple, and its attachment to an ordinary puddling furnace was made with very little difficulty. If the reader can imagine without diagrams, two very shallow cast iron pans or receivers, set upon the floor of the furnace; in these pans heavy, closely fitting perforated cast iron plates, lying upon shelves but half an inch raised from the bottom; leading to the centers of these receivers, from beneath, oil pipes connecting without with a tank or barrel sufficiently elevated to give the oil a good head; intercepting the oil pipes near the furnace, a small cylinder in which is an automatic valve, which can be set at any position to automatically regulate the flow of oil—he will have about all there is to the device. Auxillary, however, to it are pipes for carrying exhaust steam for blast, a bridge wall back of the receivers to detain the flame, and a water-lined arch to protect the burners.

The mode of operation is also entirely free from complication. The automatic valve being set, the oil is allowed to flow in the receivers; a handful of cotton waste, ignited, starts the fire; the plates become heated, and the oil, forcing its way up under the plates, is instantly atomized, and rushes up through all the perforations—gases, hydro-carbons and all—into a brilliant flame, leaving no residuum whatever beneath.

Identically these results were reached at the first test made last Thursday (May 1), as witnessed by a representative of this journal. The first fire was lighted about 9:30 a. m., but the full heat was not let on until about 11. At 12:10 p. m. the furnace was charged, and at 1:22 p. m.—exactly one hour and twelve minutes—the first heat was concluded. This in a "green" furnace and in the face of the fact that it usually requires 1½ hours to accomplish the same result in ordinary coal-heated furnaces, may be said to be very good as a first test. The pig iron melted rapidly, the balling was performed without difficulty, and the ball went through the squeezer in excellent shape. Necessarily there were some drawbacks. The steam used for blast was scarcely dry enough, the pressure being only 70 pounds at most; there was a slight escape of smoke from the rear of the furnace when the draught was open, and the high wind was not conducive to the most favorable test—nevertheless the results were all that could be desired, so far as demonstrating the practicability of puddling iron with crude petroleum as a fuel is concerned. The economic aspects of the problem will require still further experimenting; but from the energy, perseverance and intelligence thus far displayed by the inventor, there can be but little doubt as to the outcome. The combustion, it may be remarked in conclusion, was practically perfect; not a sign of smoke could be seen escaping from the chimney.

A stock company is now being formed in the interest of Miss Jones' invention. Its capital stock is to be $30,000. She retains 51 per cent. of the full amount and offers $5,000 for sale. Ten per cent. of this is to be paid in immediately. The successful use of petroleum in iron manufacture is no longer an experiment, and stock in this company ought to be readily taken up by the oil producing fraternity. It is particularly appropriate that this invention should find means for its widespread introduction among the men who have made petroleum production the business of their lives.

MACKSBURG.

The Buckeye oil field, which menaced the trade last spring, is narrowing its possibilities each month as the drill goes down outside the bordering lines of the defined field. Two important test wells have been placed on the dry list since the September issue of the AGE. The territory east of the present development was closed to an extension to the eastward by a line of dry holes. A theory was entertained that a streak might extend in a northerly direction. The Barnsdall well on lot 21 in Enoch township, three miles north of the Denman well, would seem to set at naught this theory, as it has passed below the sand level and is very dry.

Bradley & Co.'s well, on the Linscome farm three-quarters of a mile east of the Denman well, is a failure. The following is a list of the wells completed, with their estimated new production September 30th:

Farm. Operator.	Barrels.
DeLong, Macksburg Oil Co	5
Rice, Geo Rice	30
Linscome, Bradley & Co	dry
Wells	3
Production	35
Dry	1

Below is a list of the rigs up and building and wells drilling on the first of the month:

Farm. Operator.	Depth.
Perkins, C E Lineman	rig
Perkins, C J Garvey No 3	100
Marke, Willis Decker	200
Moss Run, C J Garvey	rig
F fteen Mile Run, Coast & Rice	rig
Warren, D W Clark & Co	rig
" J D Wolf	rig
Stanley Matthews, Ohio Oil Co	1150
Devel, Bradley & Co	rig bldg
Middleburg, P C Boyle	rig bldg
Warren, Barnsdall & Co	rig bldg
Atkinson, D W Clark & Co	1100
S Dutton, Best Bros	100
Dudley, W Decker	100
Rice, George Rice	rig
G Schilling, Mills & Austin	700
Kathary, Baily & Kathary	1000
Warren, Bradley & Co	rig bldg
" Stevens & Co	rig
Warner, Brown & Co	1300
Elba, Geo Nesbit & Co	900
Enoch township, Barnsdall & Co	drilling
Gordon, Syndicate Oil No 2	rig
Schilling, Mills, Mullin & Denman	rig
" Syndicate Oil Co	1300
Pod Stevens, Mill & Mullin No 2	rig
G Stevens, Mills & Mullin No 2	500
Clark, " No 2	100
Patton, " No 2	rig
Clindium, C J Garvey & Co	700
Rigs	15
Drilling	15
Total	30

On the first of September there were 30 rigs up and building and wells drilling.

THE AVERAGE PRICE OF CRUDE.

The following table gives the average price of crude certificates, on the floor of the Bradford Oil Exchange, since March 1, 1879:

	1879	1880	1881	1882	1883	1884
January	..	110 1-5	95	83	92¾	111⅓
February	..	103¼	89¼	85¼	101	104⅜
March	86	89	82⅞	80⅞	97½	100⅛
April	78⅜	76⅝	84⅛	78¼	92⅝	94
May	73½	80¼	81½	70	99⅜	85½
June	68⅜	100¼	81	54½	117¼	68¾
July	69⅞	101¼	76½	57⅝	108	63½
August	67¼	90¾	78⅔	58⅔	108⅔	81 1-5
September	69¼	95½	92¼	71⅓	112½	78
October	88⅛	96¾	92¾	93⅝	111⅛	...
November	105⅜	91¼	82⅓	114¾	114 4-5	...
December	113¼	92⅜	83¾	95¼	114⅓	...

RUNS, SHIPMENTS AND STOCKS.

RUNS OR RECEIPTS.

Pipe Line.	September, 1884.	August, 1884.
National Transit Co	1,741,566.79	1,819,939.08
Tidewater	224,331.93	241,298.87
Octave Oil Co	2,488.94	2,721.00
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	6,704.78	8,504.68
Cranberry Pipe Line	3,472.28	4,402.46
Total	1,978,564.72	2.076,866.09
Daily average	65,952.15	66,995.68

In the above runs only the oil received by the National Transit Co. directly from the wells, is included.

DELIVERIES OR SHIPMENTS.

Pipe Line.	September, 1884.	August, 1884.
National Transit Co	2,060,341.65	1,802,039.26
Tidewater	212,777.14	177,791.26
Octave Oil Co	2,589.24	3,138.00
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	11,930.14	10,529.75
Cranberry Pipe Line	4,102.56	2,959.50
Total	2,291,740.73	1,996,457.77
Daily average shipments	76,391.36	64,401.86

In the above shipments only the oil delivered to refiners is included.

Daily excess of shipments over runs, September, 1884	10,439.21
Daily excess of runs over shipments August, 1884	2,593.82
Daily excess of runs over shipments, July, 1884	10,5 2.22
Dail excess of runs over shipments, June, 1884	6,443.56
Daily excess of runs over shipments, May, 1884	10,239.88
Daily excess of runs over shipments, April, 1884	11,020.89
Daily excess of runs over shipments, March, 1884	4,144.98
Daily exeess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

Pipe Line.	September 30, 1884.	August 31, 1884.
National Transit Co	37,060,135.08	37,406,856.12
Tidewater	1,536,662.62	1,527,443.84
Octave Oil Co	4,367.53	5,131.00
Charley Run	3,717.00	3,717.00
Shaffer Run	30,636,32	30,636.32
Franklin (limited)	30,069.80	35 295.16
Cranberry Pipe Line	24,696.08	25,326.34
United Pipe Line	50,438.06	51,598.23
Total	38,740,722.49	39,086,004.01

Stocks decreased September, 1884	345,281.52
Stocks increased August, 1884	97,092.86
Stocks increased July, 1884	323,063.10
Stocks increased June, 1884	190,320.23
Stocks increased May, 1884	322,981.75
Stocks increased April, 1884	1,945,919.83
Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	386,004.51

	Receipts.	Deliveries.
Daily Average September, 1884	65,952	76,391
Daily Avera e August, 1884	66,996	64,402
Daily Average July, 1884	66,702	56,170
Daily Average June, 1884	67,350	60,907
Daily Average May, 1884	66,688	56,448
Daily Average April, 1884	65,794	54,773
Daily Average March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52.737
Daily Average February	65,208	44,352
Daily Average January	65,125	43 813

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for September, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of September		1,527,443.84
Quantity of crude petroleum at close of Sept	1,624,122.03	
Less sediment and surplus	87,459.41	
		1,536,662.62
Receipts during September		224,331.93
Deliveries during September—to refiners	212,777.14	
" " " —to other parties		
		21 ,727.14
Outstanding certificates, accepted orders, etc		807,000.00
Credit balances		729,662.62
Total liabilities September 30, 1884		1,536,662.62

AUGUST SUMMARY.

		Barrels.
Quantity of crude petroleum in custody at beginning of August		2,504,907.91
Quantity of crude petroleum at close of August	1,615,319.54	
Less sediment and surplus	87,875.70	1,527,443.84
Receipts during August		241,298.87
Deliveries during August—to refiners	177,791.26	
" " " —to other parties	1,088,850.53	
		1,266,641.79
Outstanding certificates, accepted orders, etc		826,000.00
Credit balances		701,443.84
Total liabilities August 31 1884		1,527,443.84

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590
April, 1884	34,370	12,261	19,162	65,793
May, 1884	34,946	12,193	19,549	66,688
June, 1884	35,701	11,672	19,977	67,350
July, 1884	34,718	11,114	20,870	66,702
August, 1884	33,782	10,384	22,830	66,996
September, 1884	33,449	9,989	22,514	65,952

SUMMARY of the statements of the National Transit Co., for August and September, 1884.

	SEPTEMBER.	AUGUST.
Receipts from all sources	1,742,725.96	2,928,797.07
Deliveries	2,060,341.65	1,802,039.26
Gross stocks end of month	39,711,600.37	40,208,102.96
Sediment and surplus	2,651,465.29	2,801,246.84
Total liabilities end of month	37,060,135.08	37,406,856.12
Outstanding acceptances	29,721,715.30	30,379,998.80
Credit balances	7,338,419.78	7,026,857.32

The above receipts from all sources for September were made up as follows:

Transferred from United Pipe Lines, as reported to N. F. Hilton, Esq., representing the Conference of Oil Exchanges	12,484.54	
Less sediment and surplus	11,324.37	
Net amount from United Pipe Lines		1,160.17
Runs from wells		1,741,566.79
Received in iron tanks		.....
Total barrels		1,742,726.96

The above receipts from all sources for August were made up as follows:

Transferred from United Pipe Line as reported to N. F. Hilton, representing Conference of Oil Exchanges	13,168.36	
Less sediment and surplus		
Net amount from United Pipe Lines		13,168.36
Runs from wells		1,819,939.08
Received in iron tanks		1,095,689.63
Total		2,928,797.07

SUMMARY of the statement by the United Pipe Lines October 10, 1884:

Acceptances and certificates September 30	16,638.75
Credit balances September 30	33,799.31
Total liabilities September 30	50,438.06
Gross stocks	50,438.06
Sediment and surplus	....
Receipts from all sources	....
Total deliveries	1,160.17

AUGUST SUMMARY.

Outstanding acceptances and certificates, August 31	16,638.75
Credit balances	34,959.48
Total liabilities August 31	51,598.23
Gross stocks August 31	63,906.31
Sediment and surplus	12,308.08
Receipts from all sources	....
Net stocks delivered to National Transit Co August	13,168.36

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to October 1st, 1884.

1882.	Ch'y Gr've.	Cooper.	Balltown.	Total.	Daily Av'ge
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
April	31,191	126,860	71,989	230,040	7,668
May	30,010	107,514	70,069	207,593	6,696
June	25,348	89,554	67,508	182,410	6,080
July	16,206	76,762	76,601	169,569	5,470
August	20,615	63,415	67,883	151,913	4,900
September	19,590	64,648	63,453	147.691	4,923
Total Oct. 1, '84	3,326,741	1,996,434	1,452,350	6,775,525	7,665

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to Oct. 1st, 1884. Cherry Grove has produced 3,326,741 barrels, Cooper 1,996,434 and Balltown 1,452,350 barrels. The daily average runs from the three fields during Sept. were 4,923 barrels, an increase of 23 barrels from the August figures. The daily average runs from the old Cooper section during September were 1,050 barrels, and of the Henry's Mill pool 1,105; making a total of 2,155 barrels. The daily average for the Cooper district for August was 2,046 barrels, and for July 2,476 barrels. The Balltown field has a daily average of 2,115 barrels for September, against 2,189 in August, 2,471 in July and 2,250 barrels in June.

BALDRIDGE AND WARDWELL.

The two new white sand fields, Baldridge and Wardwell, are enumerated in the list. The pipe line runs from these sections since April 1st, have been as follows:

Month.	Baldridge Runs.	Daily Average.	Wardwell Runs.	Daily Average.
April	25,325	844	14,263	475
May	32,885	1,061	31,451	1.015
June	29,070	969	61,260	2,042
July	27,545	889	132,595	4,277
August	26,134	843	200,985	6,483
September	79,324	2,644	121,683	4,056

The Christie well at Baldridge was producing 153 barrels per hour on the morning of the 17th. It was reported that the pipe lines were discounting this gauge on account of salt water. The Phillips well on this date was producing 75 barrels per hour.

THE REFINED MARKET.

Notwithstanding the weakness and irregularity of the crude market, the price of the refined article was well maintained during September. The movement, however, has been comparatively moderate. The European purchaser, early in the month, was seemingly very anxious to replenish his diminished stocks, but the development at Thorn creek causing another rupture in crude, disposed him to longer pursue the waiting policy that had been followed throughout the summer months. Refined in cases was in good demand, with prices firm at 9 cents for plain brands, New York reporting sales of 2,000,000 cases in September.

Spain has been the principal buyer of crude for export, and the reduction to 6½ and 6⅞ for Bradford and Parker oil, respectively, has been followed by increased sales.

The Domestic trade in refined has been slack and uninteresting. Standard White, 110° test, is still quoted at 8 cents. Naphtha, Gasoline and Residuum have ruled very quiet, with small inquiries on the part of the foreign trade.

SEPTEMBER QUOTATIONS.

	New York.	Philadelphia.	Baltimore..	London and Liverpool..	Bremen...	Antwerp..
	Cts.	Cts.	Cts.	Pence.	Marks.	Francs
M 1	8	7⅞	7⅞	6¾	7 80	19¾
T 2	8	7⅞	7⅞	6¾	7 85	19¾
W 3	8	7⅞	7⅞	6¾	7 80	19¾
T 4	8⅛	7⅞	7⅞	6¾	7 80	19¾
F 5	8	7⅞	7⅞	6¾	7 80	19¾
S 6	8	7⅞	7⅞	6¾	7 75	19⅝
M 8	7⅞	7¾	7¾	6¾	7 70	19⅝
T 9	8	7⅞	7⅞	6¾	7 65	19½
W 10	8	7⅞	7⅞	6¾	7 65	19½
T 11	8	7⅞	7⅞	6¾	7 50	19½
F 12	8	7¾	7¾	6¾	7 65	19½
S 13	8	7¾	7¾	6¾	7 65	19½
M 15	8⅛	8	8	6⅝	7 75	19½
T 16	8	8	8	6⅝	7 75	19½
W 17	8	8	8	6⅝	7 75	19½
T 18	8	8	8	6⅞	7 70	19½
F 19	7⅞	7¾	7¾	6⅞	7 70	19⅜
S 20	7⅞	7¾	7¾	6⅞	7 70	19⅜
M 22	7¾	7⅝	7⅝	6¾	7 70	19½
T 23	7⅞	7⅝	7⅝	6¾	7 50	19½
W 24	7⅞	7⅝	7⅝	6¾	7 50	19½
T 25	7⅞	7⅝	7⅝	6¾	7 50	19¾
F 26	7⅞	7⅝	7⅝	6¾	7 50	19¾
S 27	7⅞	7⅝	7⅝	6¾	7 50	19¾
M 29	7⅞	7¾	7¾	6⅝	7 50	19⅛
T 30	7⅞	7¾	7¾	6⅝	7 50	19⅛

J. Franklin Stuart, of the New York Petroleum Exchange, is our authorized agent to receive subscriptions and advertisements for the Petroleum Age, and for the sale of our Oil Region Maps.

How easily and quickly the scene of excitement changes with the white sand pools. Since the Phillips strike at Baldridge Balltown, Cooper and Wardwell have been ignored by the speculative trade.

CRUDE MARKET FOR SEPTEMBER.

The Baldridge gusher of the Phillips Brothers has been the *bete noir* of the petroleum trade for the past thirty days. At the beginning of the month the market had assumed a steadiness that augured well for a higher range of values. It was soon noised about that the Phillips well, on the Bartley farm, Butler county, was flowing at the rate of 350 barrels a day. A gradual weakening of values followed, and a decline set in that carried prices down to 71 cents.

The month commenced with 90 cents bid for oil; the highest point reached on the first day was 91; the lowest point 70⅞; and the closing price 73½.

The golden promises, all but realized by the successful continuance of the shut-down, were rudely dispelled by the phenomenal powers of the Butler gusher. At 2:25 p. m., September 20, the market price of crude oil was 77 cents. News arrived that the Phillips well had been drilled deeper and was making 120 barrels per hour. A selling fever immediately set in, and in less than fifteen minutes prices had tumbled to 74⅜. A slight reaction followed, which carried it up to 75 cents with the closing at 3 p. m. On the Sunday following, the panicky feeling continued and some oil changed hands on the quiet at 72⅜. The first sales on Monday morning in the Bradford Exchange were at 72 cents, while Pittsburgh opened at 72⅝, Oil City at 73½ and New York at 74.

Certificates sold at the highest figure on the first of the month, and the lowest price was touched on the 22d, 27th and 29th. The average price for the month on the floor of the Bradford Exchange was 78 cents, against 81⅛ for August and 63½ for July. The average price for September one year ago was $1.12½.

THE CLEARANCES.

	September. Barrels.	August. Barrels.
Bradford Oil Exchange	131.922,000	143,426,000
Bradford Prod. Pet	28,278,000	44,678,000
Oil City	207,452,000	215,992,000
New York, N. Y. Pet	164,612,000	183,682,000
New York, National	328,357,000	308,916,000
Pittsburgh Oil (old)	6,000,000	8,108,000
Pittsburgh Petroleum (new)	120,000,000	120,002,000
Total	986,621,000	1,024,804,000

The Clearances in the Pittsburgh Exchanges for September are estimated.

The shut-down movement of 1884 has shown the world that oil producers can combine to further their own interests.

In the whole Cole Creek section, which once contributed largely to deluging the world with oil, there is only one well drilling.

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

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J. C. McMULLEN. A. L. SNELL.

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THE PRODUCING REGION.

ALLEGANY FIELD.

The yield of the new wells completed in the Allegany district no longer sustains the production of the field. The pipe line runs and all available figures on stocks at wells, indicate that the red sand field at the northeastern end of the region is waning. The undrilled territory beyond the borders of the defined outlines affords a transparent sand rock, which rewards the operator with wells of a slender calibre. One of this kind was finished on the southeastern corner of lot 20, in the town of Clarksville, by Isenhour, Clover & McDowell. It is situated near the wells drilled on the Butts farm, and will make a five-barrel producer. Faught & Co. are sinking a test well on the German farm, west of the village of Clarksville. The South Alma section receives some attention from the operators, who have ready money and are content to wait for slow returns. Dewees & Donnelly and Hostetter & Shirley have lately completed wells on lot 109. O'Connor & Co. will drill one on lot 62, Willing. Seven wells were completed, with a new production on the last day of the month of 58 barrels. During the first 15 days of the month only one well was added to the producing list. On the first of October there were six new rigs up and building, 63 which had been standing 30 days or longer, and 12 wells drilling, making a total of 81.

BRADFORD FIELD.

When the first well was put down on the King farm, up the West Branch of the Tuna, the quiet which rested over the Bradford field was strikingly at variance with the scenes which have since been enacted within its broad domain. At that time wolves prowling about the East Branch would echo an answer to the whistle blown at the drilling wells on the other side of the lofty ridge on the King farm.

The sleepy driller long since ceased to have the howl of the wolf for a lullaby song, but the quiet which again steals over the Bradford field through the absence of new work, is not unlike that which was broken by the wolf's wild cry. The count at the close of September showed that eleven wells were completed during the month, having a new production of 171 barrels. John McKeown completed one large well at the Cole Creek front, and Schoonmaker & Van Vleck found a duster on warrant 5556, between Marshburg and Kinzua Village. On the first inst. there were four new rigs and eight wells drilling in the district. The average daily runs for September from the wells were 33,450 barrels. The work of cleaning out and drilling old wells deeper continues in some sections of the field and through this instrumentality the production is nearly sustained.

WARREN AND FOREST.

There were but forty-eight wells completed in the Middle Field during September, and ten of these were dry. On the first of October there were 25 wells drilling and 20 new rigs up and building. During the first half of the present month fifteen new wells were brought in and two of these proved dusters. In the Wardwell district the operations are confined to two firms—Barnsdall Brothers and Wesley Chambers—and will cease entirely within 30 days. Nearly all the wells near the river have been put in pumping trim. The wildcatter has been fairly industrious throughout Warren and Forest, but September failed to score him any successful ventures. Morck & Co. finished a dry hole near Hatch Run, on the Christian Koebelin farm, warrant 5905, Glade township, and Lacey & Co. achieved the same results on the Fletcher farm. Both these tests are in the vicinity of North Warren. The Morck well was drilled to a depth of 1,235 feet, and found 15 feet of Wardwell sand.

Kinzua Village is also an attractive locality at the present time for the adventurous prospector. The well at Big Bend, below the village—warrant 2428—is making a showing for a small well and exciting the hopes of the prosaic denizens, but its productive calibre has not yet been ascertained. The sixty-quart torpedo exploded at the wrong spot, and this explanation is plausibly urged by the natives when the skeptical observer seeks for more positive information about the well. A well is starting on the Pratt lot, within the village limits. It is to be sunk by the contributions of a number of liberal minded citizens. Parker & Co. have a rig up on the Fuller farm,

near the banks of the river and north of the village.

The Fredericks well, on the Darling farm, one hundred acres off warrant 5555, Glade township, is reported down and dry. Hunter & Co. are drilling a test near the northwest corner of 5565, and Johnson & Co. are drilling near the northwest corner of warrant 5564. These ventures are being sunk with the end in view of discovering a pool similar to the one at Wardwell Ferry.

BALLTOWN AND COOPER.

The Cooper and Henry's Mills section is the quietest part of the entire field. Horton, Crary & Co.'s No. 2, on lot 395, was the last drilling well in this vicinity. It marks the northern limits of the Cooper streak, and will make a very light producer.

The Gartlan No. 5, on warrant 3195, Balltown, proved a very good well, starting at 200 barrels when shot. It is located 900 feet north of the south line of the tract. The old Barnsdall & Briody well is being cleaned out, and will probably result in a small producer. An accident with the torpedo bridged over the well and a vexatious delay ensued upon account of it. A rig is building on this warrant near the old well, and Lewis Kreear is drilling to the north, on lot 741, in Cherry Grove township.

LOWER COUNTRY.

The lower country was the important factor in the petroleum situation during September, and it bids fair to maintain a leading position through October. The great Phillips gusher was the locale of all interest in this division of the field, the other sections being devoid of special importance. On the last day of August the Phillips began flowing, but did not rise to a position among the largest wells in the history of the trade until September 6th, when it was drilled deeper and began flowing over 80 barrels an hour. Five days later, farther drilling brought it up to 38 inches an hour in a 250-barrel tank, though its record of greatness culminated on the morning of the 24th, when, after half an hour's drilling, it put 15 inches in the tank in as many minutes, and six hours later was making 49½ inches per hour. From that point the production has declined slightly, though the slightest agitation still temporarily improves it. At this writing the owners are anxious to send the drill on through the sand, but are unable to get the tools out to change the bit or pump out the loose sand, the gas pressure being too weak to clean the hole, contrary to the ordinary habit of large wells. Every time the tools are drawn to the casing head the flows are increased. The regular output is still 38 to 40 inches an hour.

The Johnson No. 2, on the Henderson, 1,200 feet southwest of the Phillips, on a 33° line, attracted much attention during the early part of this month, being manipulated as a mystery in the most approved modern manner. The army of scouts surrounding it rendered an unanimous verdict of dry on the 4th inst., but the well was not opened to the public until 10:30 a. m. on the 8th, when its record was given up. It tapped the sand at a depth of 1,481 feet, being 6 feet lower than the Armstrong & Semple, by surface level. The rock was passed through at the depth of 1,518 feet, and drilling suspended at 1,528 feet, no oil or gas being encountered below the "100-foot sand," where black slush oil was found, the well flowing five or six barrels daily.

The same day the Johnson was opened to public inspection, Phillips' Bartley No. 3, 500 feet north of the gusher, struck green oil in the "100-foot sand," and filled up 200 feet with oil and salt water, promising a 50-barrel production from that rock. Such a case occurred on the Wallace tract, where Fisher Bros. & Co.'s No. 4 developed a production of 40 barrels from the "hundred foot," but was barren in the "stray" and regular sands. On either side of it are fourth-sand producers, No. 1, 400 feet north, having started at over 500 barrels, and No. 7, 600 feet south, at 75 barrels, from the lower stratum. From this circumstance, many argue that Phillips' No. 3 will not be a large producer from the regular sand, though others contend that the lower sands have been unable to hold the enormous quantity of crude, allowing some to accumulate in the upper rock. This month should witness the completion of this well, Bartley Nos. 2 and 4, Phillips' Doods No. 1, Christie No. 1 on the Bartley, Sheidemantle No. 1 on the Moyer, Reep & Sutton on the Brown, Fisher Nos. 1 and 3 on the Marshall and 10 on the Wallace, and Armstrong & Semple No. 2 on the Marshall, with possibly one or two others, which will be sufficient to give a very good idea of the future capabilities of the field.

The Straight Run Oil Company is wildcatting on the D. Douthett farm, six miles southwest of the new district, and a Pittsburgh company is searching for crude near Bakerstown, in Allegheny county.

NEATLY bound volumes of the AGE for sale.

THE MYSTERY MAN MUST GO.

Notwithstanding that many of the strongest companies engaged in producing oil have forgotten themselves at times and engaged in mystifying wells, there has always been a strong feeling among dealers against the practice. Until recently this feeling has taken the course of an undertow, but now an open expression of disapprobation seems to be in order. The business of mystifying wells for the sole purpose of working the market will not bear a cursory examination. There may be a distinction but there is no difference between the mystery man or the market and the gambler who plays with loaded dice, for both outrage a courtesy or custom recognized everywhere by the gentlemen who toy with the mathematical theory of probabilities. The feelings which animate the manipulator of wildcat wells are the same as those which quicken the pulses of a bunco-steerer and confidence man. He is playing or means to play a skin game with the oil trade. To unscrupulous men in search of notoriety, the mystery business opens an inviting field. The man who secures a lease or buys an acre of wild land on a geographical range with white sand pools and begins to blaze timbers for a rig, has temporary greatness thrust upon him. If he is fortunate enough to stand off engine and boiler men, or induce some unfortunates to furnish the means, the drill is started and the interest in him increases as it travels toward the sand. A man who controls a mystery becomes an object of morbid curiosity to the oil trade in general, and oil scouts and reporters in particular. His movements are carefully scrutinized as the interesting point is neared and he masquerades before the oil world as a man in whom there is something concealed of valuable import.

There is no doubt that this juggling of important test wells has driven capital from investment in oil. Men with money, which could have been used in carrying oil, have become disgusted with oil speculation through the work of tricksters. No one will dispute the right of a well-owner to use the first information to his advantage in securing lands, but when he drills a well or secures the control of one for the single purpose of speculation, the trade has sensibly concluded to frown on his enterprise.

On the 30th of September a meeting of Baldridge operators was held at Butler to take action and obtain an expression of sentiment in regard to mystifying wells for speculative purposes. At this meeting J. J. Fisher, of Fisher Bros., was elected chairman, W. D. Brandon secretary, and Thos. W. Phillips, Ferd. Reiber and W. D. Brandon were appointed a committee on resolutions. Nearly all the exchanges telegraphed resolutions. The following is the testimony received at the meeting. The New York Petroleum Exchange said by wire:

The following resolution just passed:

Resolved, That the members of this Exchange heartily endorse the action of the oil country exchanges and producers in protesting against the manipulating and mystifying of oil wells for market purposes as detrimental to all interested in the oil business.

(Signed) L. H. SMITH, *President.*

The Bradford Exchange telegraphed as follows:

Resolved, That any action looking to the manipulations of the Johnson or other wells in the interest of any clique or individual for the purpose of affecting the market be condemned as giving undue advantage.

Over fifty members of the Oil City Oil Exchange signed the appended message:

T. W. Phillips and Hardman:

We, the members of the Oil City Exchange, wish you God speed in your meeting and hope you and the Butler county producers will bury the shot-gun, bull-dog, mystery well-business so deep that Gabriel's horn will fail to resurrect another. Your meeting is a step in the right direction.

The Millerstown Exchange wired: We wish you success in denouncing the mystery business.

Sheidemantle and Cooper Bros. telegraphed: We are with you in opposing the mystery business.

The following resolutions were unanimously adopted by the Butler meeting:

First—That the practice of making mysteries of oil wells has placed the oil business in a different light before the world from any other industry, and has done great injury by deceiving those who desire to purchase oil or oil lands, by rendering it impossible to procure accurate information which is highly essential.

Second—That while some honorable operators in the upper field may have countenanced the mystery business, we hope that they, forgetting the past, will join us in suppressing this great evil.

Third—That the practice of barricading and guarding derricks with bull-dogs and fire-arms ought not to be tolerated in a civilized community.

Fourth—That where owners of wells bargain with persons to use their wells to work the market by deception, we deem it a fraud on their part and a conspiracy against the trade.

Fifth—That the practice has brought odium upon the business and prevented large sums of money from being invested in our commodity and has made it very expensive to gain accurate information so that capitalists will not invest fearing fraud and deception.

Sixth—That from this time forward we will use all honorable and legitimate means to suppress the mystery business, and will not recognize persons engaging in it as legitimate operators.

Seventh—That we urge all land owners to incorporate in all leases a clause prohibiting the lessee from permitting wells from being worked as mysteries under a penalty of instant forfeiture of such leases.

Eighth—That we request producers to give early and accurate gauges of wells to the exchanges and the public; that whenever convenient operators bring in wells outside of exchange hours, and suggest the trade pay less attention to particular wells and more to monthly reports and general statistics.

Ninth—That these resolutions be given to the press, and that a copy be sent to the various oil exchanges, and that they be requested to speak in condemnation of the practice as the exchanges at Oil City, New York and Bradford have already done.

(Signed) THOS. W. PHILLIPS,
FERD. REIBER,
W. D. BRANDON.

SEMI-MONTHLY REPORT OF FIELD OPERATIONS.

A canvass of the entire region by representatives of the PETROLEUM AGE shows that 39 wells were completed during the first fifteen days of October, having an estimated new production on the 15th of the month of 3,461 barrels. Of the whole number of wells completed 7 came in dry. In the aggregate of new production the well of Christie Bros, at Bald Ridge, is estimated at 3,000 barrels.

WELLS COMPLETED OCT. 1 TO OCT. 15, 1884.

Field.	Wells.	Production.	Dry.
Allegany	5	40	1
Bradford	4	42	0
Warren and Forest	16	155	2
Lower Country	14	3224	4
Total	39	3461	7
Total Sept. 1 to Sept. 15	40	2248	4

The appended table gives totals of new rigs, old rigs and drilling wells in each section of the field, on the 15th inst.:

Field.	New Rigs.	Old Rigs.	Drilling.	Total.
Allegany	5	61	14	80
Bradford	4	62	11	77
Glade	8	4	9	21
Clarendon	3	14	4	21
Tiona	4	8	5	17
Cooper	0	1	0	1
Balltown	1	8	1	10
Miscellaneous	3	2	3	8
Venango	9	2	7	18
Clarion	0	1	2	3
Butler and Armstrong	10	5	43	58
Total Oct. 15	47	168	99	314
Total Oct. 1	52	173	88	313
Difference	5	5	11	1

On the 15th inst there were five less new rigs five less old rigs which have been standing for thirty days or longer, and eleven more wells drilling. Compared with the October 1st figures there was an increase of one in the totals of new operations.

The well of Christie Bros in the Baldridge district is probably the largest well ever struck in the Pennsylvania region. It is located 367 feet west of the gusher of Phillips Bros., and began flowing on the 11th inst. at 50 barrels per hour. It was improved by deeper drilling on the afternoon of 13th, and for the hour ending at 8 a. m. on the 14th, produced 263 barrels. Its production varied throughout the day, but in the afternoon it was flowing 230 barrels per hour. With all this rush of crude it is doubtful if the Baldridge pools will exhibit an average yield per acre of 2,000 barrels.

COL. L. M. MORTON.

On the 26th of September the hand of one of oildom's pioneer journalists was stilled forever. Col. Leander M. Morton, editor of the Pithole *Record* in 1865 and associate editor of the Bradford *Era* during the past four years, died at the home of his sister in Montreal. Fagged with continuous night work on a morning daily he was passing a much needed vacation in the hope of recuperating his overtaxed energies. Slender of build, his untiring industry and tenacity had caused him to work far beyond his strength. His friends and co-workers who associated with him daily were not aware when he departed from Bradford early in September that life was reduced to the very dregs of existence and that he would never rally from his exhausted condition. Col. Morton was the source of appeal who settled easily all points which perplexed the men who gave their lives to newspaper toil with him. In the atmosphere in which he moved it was easy to relieve all work of drudgery. He became the warm and sympathetic friend of all who knew him. Though living only to the age of forty-six he had assumed life's responsibilities early and leaves a wife, four daughters and one son, who will keep his memory green. In his own home where he was fondly loved a wide space is made vacant. The light has sadly gone out but there still remains a beautiful memory.

SEPTEMBER OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN SEPTEMBER, 1884.

Allegany Field.

Lot. Owner.	Barrels.
Scio, lot 1, Latimer & Stearns	8
Alma, lot 109, Dewees & Donnelly	10
do lot 140, Willets & Rauher	10
Bolivar, lot 6, I Collins	5
do lot 15, John Benninger	10
Clarksville, lot 20, McDougal, Isenhour & Co	5
Genesee, lot 14, C W Scofield No 9 est	10
Wells	7
Production	58
Dry	0

Bradford Field.

Farm. Operator.	Barrels.
Tuna Valley, Hinchey, S W McMurray & & Co No 4	8
do Wilson, W A Waid	6
Quintuple, P Kearns	8
Kendall Creek, Mack, Logan & Seekins	8
Four Mile, VanCampen, Wm Doe	10
do Widow Carroll, Thomas Kervin No 9	8
do Stevens, Coast & Curtis	8
Indian Creek, Dodge, S ear Bros No 8	10
Winchell, A Crandall & Co	5
Cole Creek, lot 580, John McKeown	100
Warrant 5556, Schoonmaker & Van Vleck	dry
Wells	11
Production	171
Dry	1

Warren and Forest.

Glade and other Towns.

Tract. Owner.	Barrels.
H M Smith, Allen, Hi gins & Co	dry
John Mead, Beatty Brothers	dry
Sill farm, lot 453, S P Newell & Clark	dry
Lot 460, Anchor Oil Co	dry
Lot 502, Adams, Story & Sargent	dry
Cobham, Union Oil Co No 19	25
Marsh, J A Weihle & Co No 2	50
do do No 3	20
Cobham, Bruce & Co No 2	dry
do The Pool No 17	10
do do No 18	25
do do No 19	20
do do No 20	40
J L McWilliams, Hayes, Gartlan & Co No 10	30
A McWilliams, Roy, Pickett & Co No 8	10
Rogers, Book & Gartlan No 7	25
do do No 8	8
Brown pur, Anchor Oil Co No 4	15
Rogers No 1, Johnson & Anchor Oil Co No 1	30
do do Johnson & Anchor Oil Co No 2	30
do do Johnson & Anchor Oil Co No 3	15
do No 2 Murphy, Johnson & Co No 1	30
do (14 acres) Wesley Chambers	30
Rogers, Barnsdall Bros No 7	40
do do No 8	40
do do No 9	40
do Reid & Brenneman No 2	50
do do No 3	40
do do No 4	30
Wells	29
Production	653
Dry	6

Clarendon.

465, Wm Pagett, No 3	5
107, Fay & Lawton	6
162, Etna Refining Co	4
526, F G Keatley No 7	8
582, P A Gilbert No 1	8
464, Columbia Oil Co No 18	6
Wells	6
Production	37

Tiona.

81, Fertig & Henne	4
104, Armor & Co No 2	6
161, Helm & Mealey	6
204, Wheeler, Bovaird & Seyfang No 2	6
204, do do No 3	6
204, Emerson & Farnsworth	8
Wells	6
Production	36

Cooper District.

E T Co, Fertig & Henne	dry
Warrant 3198, Capt Haight	dry
Wells	2
Production	0
Dry	2

Balltown.

3194, Porcupine Oil Co No 29	20
3195, N F Clark No 2	30
3195, J A Gartlan No 5	25
Wells	3
Production	75
Dry	0

Miscellaneous.

Forest, 3171, Marienville, Dilks & Co	dry
Warren, 5225, Van Syckle	dry
Wells	2
Production	0
Dry	2

Lower Country.

Venango.

Farm. Operator.	Barrels.
Diamond, Manning & Darr	10
Flinchpaugh, A P Dale	20
Oberly, J H Oberly	10
Philad'a Tract, Gallagher & Co	dry
McCormick, M Braunschweiger	4
Mt Hope, McCutcheon & Co	10

Vicinity Emlenton.

Leslie, Stevens & Co	5
D M Crawford, Daniels & Co	7
do W L Book & Co	6
Leslie, H Stevens	5
Bradley, Black & Co	7
McGinniss, McGinniss & Williams	8
Jew Tract, Jamison & Flowers	15
Wells	13
Production	107
Dry	1

Butler and Armstrong.

Kelly, Hooks Bros	10
Doylestown, Showalter & Co	10
Brady Tr ct, Hunter & Cummings	10
Diler, W S Williams	4
Ritzert, Showalter & Hartman	30
Hudebrand, Fisher Bros	dry
S Shaffner, Wm Reed	dry
Butler, Manufacturers' Gas Co	dry

Baldridge.

Bartley, Phillips Bros	2300
Renfrew, do	4
do Christie Bros	5
Wells	11
Production	2373
Dry	3

DRILLING WELLS, RIGS UP AND BUILDING OCT. 1.

Allegany Field.

Scio.

Lot. Owner.	Depth.
2, Coast Oil Co No 31 (old)	rig
2, Pennell Bros No 4 (old)	rig
3, Coyle (old)	rig
4, Jas McEnroe No 4	drilling
4, Breckenridge (old)	rig
11, Thompson & Vesey No 4	drilling
11, Lowcomer & Turner (old)	rig
12, Allen & Morse (old)	rig
12, Griffin & Co No 7 (old)	rig
12, do No 10 (old)	rig
50, The Union Oil Co No 8 (old)	rig
50, do do No 9 (old)	rig
L Morton farm, A J Applebee No 3 (old)	rig
1, Pickering & Smith (foundation laid)	rig bldg
New rigs	1
Old rigs	11
Drilling	2
Total	14

Alma.

1, Phillips Bros No 14 (shut down)	300
1, do No 15 (old)	rig
23, Vance & Horton (old)	3 rigs
24, New Milford Oil Co old)	2 rigs
24, W F Jones (old)	rig
24, Sutherland & Co No 5 (old)	rig
38, Perrin & Young No 15 (old)	rig
38, do No 1	500
51, Sawyer & Co (old)	rig
55, W P Decker	rig
66, Thos Pooler	rig bldg
88, Duke & Co (old)	rig
109, Shirley & Hostetter	drilling
142, Dean & Smith No 5 (old)	rig
New rigs	2
Old rigs	12
Wells drilling	3
Total	17

Wirt.

14, Lester & Co. (old)	rig
30, (Kenyon farm) John Moran	drilling
33, Miner, Wellman & Fuller (old)	rig
43, (Wilcox farm) AlleganyGasCo (old)	rig
61, Muldoon Oil Co (old)	rig
1, George McCoy No 3 (old)	rig
Wheeler, McKenzie & Co	rig bldg
Straight, Nat Transit Co	rig bldg
New rigs	2
Old rigs	5
Wells drilling	1
Total	8

Bolivar.

7, W & J Duke No 16 (old)	rig
7, Coast Oil Co No 20 (old)	rig
7, do No 42 (old)	rig
7, do No 45 (old)	rig
8, Jordan Oil Co	drilling
15, Fay (old)	rig
15, Kelly & McMurray (old)	rig
15, Sawyer & Co (old)	rig
15, John Benninger (old)	rig
23, F C Streeter & Co No 4	700
23, do do No 7 (old)	rig
23, Irvin & Morgan No 4	400
23, do No 5	rig
30, Fritz & Lowry No 8 (old)	rig
30, do do No 10 (old)	rig
31, Smith & Co No 10 (old)	rig
31, Hydrick & o No 6 (old)	rig
Wetherby, Empire Gas Co (old)	2 rigs
New rigs	1
Old rigs	15
Drilling	3
Total	19

Clarksville.

9, Heuston & Brecht No 4 (old)	rig
9, Merritt (old)	rig
12, Cuba Gas Co (old)	rig
Gesman, Faught & Co	drilling
New rigs	0
Old rigs	3
Wells drilling	1
Total	4

Genesee.

8, I Willets (to the top of sand	drilling
8, do (old)	rig
14, C W Scofield (old)	rig
14, Merwin (old)	rig
21, Empire Gas Co No 3 (old)	rig
22, I Willets No 13 (old)	rig
22, do No 14 (old)	rig
22, do No 15 (old)	rig
22, do (old)	rig
23, Hughes & Coughlin (old)	rig
23, Emery Oil Co No 16 (old)	rig
23, do do No 17 (old)	rig
Champlain, Emery Oil Co No 8 (old)	rig
29, William Cranston (old)	rig
31, H L McMullan & Co (old)	rig
38, S E Young (old)	rig
38, Empire Gas Co (old)	rig
New rigs	0
Old rigs	16
Drilling	1
Total	17

Miscellaneous.

Towanda, C M Carroll & Co	1000
Gains, Peck & Tait (old)	rig
New rigs	0
Old rigs	1
Wells drilling	1
Total	2

Bradford Field.

East and West Branches.

Farm. Operator.	Depth.
Paton, McClure & Co (old)	rig
Clark, McCray Bros (old)	rig
Willis, do No 29 (shut down)	550
Glass, Barnsdall Bros (old)	rig
Bingham, lot 186, R J Straight No 3	1500
Dent, P C L & P Co No 64 (old)	rig
do do do No 65 (old)	rig
do Whitney & Wheeler No 40 (old)	rig
Mill lot, Whitney & Wheeler No 9 (old)	rig
Crooker, Jennings & Curtis No 10	drilling
Paul, Bayne, Fuller & Melvin No 5(old)	rig
Wilson, West Branch Oil Co No 11 (old)	rig
Sugar Run, W H D Chapin (old)	rig
Cary, Duncan No 4 (old)	rig
Mack, Fisher Brothers No 19 (old)	rig
Bowen lands, Phillips & Co	rig bldg

Quintuple.

25, E Strong & Co (old)	rig
44, J W Humphrey (old)	rig
174, D Atwater & Co	drilling
179, Booth Bros	500
220, Clark, Stearns & Co (old)	rig

New rigs . . . 1
Old rigs and shut down . . . 16
Drilling . . . 4
Total . . . 21

Kendall Creek.

Melvin, P C L & P Co No 85 (old)	rig
do do do No 86 (old)	rig
do do do No 87 (old)	rig
Borden, Urquhart & Lavens (old)	rig
Norton, Dan Clark No 3 (old)	rig
do do do No 4 (old)	rig
Irons, Carter (old)	rig
Dodge, Dodge & Carter	drilling
do do (old)	rig
Willets, I Willets (old)	rig

New rigs . . . 0
Old rigs . . . 9
Drilling . . . 1
Total . . . 10

Foster Brook.

E T Co, Boyne, Penny & Coleman No 11 (old)	rig
do F L Blackmarr & Post No 5(old)	rig
do R W Evans (old)	rig
C B & H, Watson Oil Co No 33 (old)	rig
do do do No 34 (old)	rig
do Juter & Yager (old)	rig

New rigs . . . 0
Old rigs . . . 6
Well drilling . . . 0
Total . . . 6

Four Mile.

Van Campen Wm M Brown (old)	2 rigs
do Brown & Harriett (old)	rig
do Merrill & Perrin (old)	rig
do Geo Van Campen & Sons No 21 (old)	rig
do Geo Van Campen & Sons No 22 (old)	rig
do Cleveland Oil Co No 5 (old)	rig
do do do No 6 (old)	rig
do Wm Doe No 5 (old)	rig
Waters, Griffin & Howard No 2 (old)	rig
C B & H, James Smith (old)	rig
Widow Carrol, Thomas Kervin No 10	1200
do Malloch & Griswold (old)	rig
Stevens, Stevens	300
do Burns Bros	rig

New rigs . . . 1
Old rigs . . . 11
Drilling . . . 2
Total . . . 14

Indian Creek.

Barse, Union Oil Co No 36 (old)	rig
North Branch, J D Downing & Co (old)	2 rigs
Keating, Forest Oil Co No 47 (old)	rig
Hamlin, Miller & Odell No 4 (old)	rig
Zimmer, Shear Bros (old)	2 rigs
Morse, Morse & Brown (old)	rig
Miles Loop, Union Oil Co No 25 (old)	rig
Keyes, Dan'l Keyes	rig
Between Eldred and Olean, White & Co (old)	rig

New rigs . . . 1
Old rigs . . . 10
Drilling . . . 0
Total . . . 11

Cole Creek.

Rew, Capt E Frawley (old)	rig
Bingham, lot 536 Union Oil Co (old)	rig
do lot 550 do (old)	rig
do lot 495 Union Oil Co No 3 (old)	rig
do lot 566 John McKeown No 15	300
do lot 566 do	rig

New rigs . . . 1
Old rigs . . . 4
Drilling . . . 1
Total . . . 6

Kinzua.

Bingham, Union Oil Co No 56 (old)	rig
do (C P & H pur) Emery Oil Co No 40 (old)	rig

Kinzua Village.

U O Co, Dr E A Van Scoy (old)	rig

New rigs . . . 0
Old rigs . . . 3
Drilling . . . 0
Total . . . 3

Warren and Forest.

Glade and Other Towns.

Tract. Operator.	Depth.
North Warren, Koebelin, Morck & Co	500
do Lesler, J A Best & Co	300
do Siggins, B V Siggins & Co	600
do Morgenradt, Unknown (old	rig
do J Fletcher, Lacey, Herzell & Co	drilling
Fuller farm, Kinzua, Jas Parker & Co	rig
Kinzua Village, Kinzua Oil Co	rig bldg
2428, (Kinzua) Moore & Co	drilling
5563, (Glade) Fredericks & Co	drilling
5564, (Glade) Johnson & Co	rig
5542, (Elk twp) Schnur & Robbins	rig
Reighe, S M Cogswell & Co	rig bldg
Sweating, J A Magee	drilling
Wardwell, Benedict & Robinson No 12 (old)	rig
Cobham, Union Oil Co No 13 (old)	rig
Foster, Wesley Chambers No 1 (old)	rig
Kirwin, Clark & Foster (old)	rig
Irvine, T J Melvin No 4 (old)	rig
Copeland, Wm Pagett & Co (old)	rig
Rogers, Barnsdall Brothers No 10	sand
do do No 11	drilling
do do No 12	drilling
do do No 13	rig
do do No 14	rig
do Reid & Brenneman No 5	sand
Lot 461, Otis F Hoffman No 3	sand
Lot 461, do No 4	drilling

New rigs . . . 7
Old rigs . . . 7
Drilling . . . 13
Total . . . 27

Clarendon.

Lot. Operator.	Depth.
35, (Mooney farm) Bell No 2 (old)	rig
54, D Beatty & Son No 36 (old)	rig
78. do do (old)	2 rigs
466, Stoneham Oil Co No 3 (old)	rig
466, D Riddlesperger (old)	rig
464, Columbia Oil Co No 17 (old)	rig
466, J Smith & Son No 6	rig
465, W Benedict No 12 (old)	rig
106, Golden & Co (old)	rig
107, Fay & Lawton No 17	400
108, C H Filkins (old)	rig
495, W W Ballard No 4 (old)	rig
526, F G Keatley No 8	sand
526, Emerson & Co No 2	300
529, J C Goal No 3 (old)	rig
529, do	rig bldg
561, F H Rockwell & Co No 13 (old)	rig
583, do do do No 14 (old)	rig
582, H G Lapham No 7	rig
610, Unknown	600
668, Holman	1000

New rigs . . . 3
Old rigs . . . 14
Drilling . . . 5
Total . . . 22

Tiona.

Lot. Operator.	Depth.
75, Fertig & Henne (shut down)	sand
59, do (shut down)	sand
104, Armor & Co No 3	rig
109, J S Patterson No 31 (old)	rig
109, Schonblom & Townsend No 8 (old)	rig
110, Fertig & Henne (old)	2 rigs
109, J R Kuhn & Co	rig bldg
109, Allen, O'Donnell & Co	rig bldg
161, Helm & Mealey (old)	rig
164, Hill & Powell No 4	sand
165, C H Coffin & Co No 2 (old)	rig
165, Wm Paget No 17 (old)	rig
204, Wheeler, Bovaird & Seyfang No 4	800
204, do do No 5	rig
204, Emerson & Farnsworth No 6	500
205, Sage, Kelly & Ross	rig

New rigs . . . 5
Old rigs and shut down . . . 9
Drilling . . . 3
Total . . . 17

Cooper District.

Tract. Operator.	Depth.
Lot 395, Horton, Crary & Co No 2	drilling
Lot 438, Shank & Emery No 23 (old)	rig

New rigs . . . 0
Old rigs . . . 1
Drilling . . . 1
Total . . . 2

Balltown.

Lot. Operator.	Depth.
Lot 741, Cherry Grove, L Kreear	rig
3194, Porcupine Oil Co No 21 (old)	rig
3195, Emery, Agnew & Co No 6 (old)	rig
3195, do do No 7	rig
4821, Balltown Oil Co No 24 (old)	rig
4792, Howe Oil Co No 16 (old)	rig
4792, do do No 17 (old)	rig
5236, May, Kelly & Grandin No 28 (shut down)	sand
5236, do do No 29(old)	rig

New rigs . . . 2
Old rigs . . . 7
Drilling . . . 0
Total . . . 9

Miscellaneous.

Elk Co, Grant's Mills, O'Connor Bros (old)	rig
Elk 3662, McDermott	drilling
Forest co, Wheeler tract, Erie parties	rig bldg
do West Hickory, Wolcott & Co	drilling
Forest 3164, J M Arters	drilling
Warren, 5223, Vandergrift shut down near sand	
Queen's Run, Hunter & Co	rig bldg
Youngsville, Unknown	rig

New rigs . . . 3
Old rigs . . . 2
Drilling . . . 3
Total . . . 8

Lower Country

Venango.

Farm. Operator.	Depth.
Diamond, W H Loots	700
McCalmont, P McCalmont	750
Kaufman, A P Dale (old)	rig
Galbreath, Cramer & Co	sand

Vicinity Emlenton.

McCullough, Porterfield & McCombs (old)	rig
do Messner & Co	sand
A M Crawford, Sherry & Knight	300
Black, Weible & Boyce	300
Richey, E Crawford & Sons (old)	rig
Goodrich, E Goodrich (old)	rig
Calvert, Jas T Young	300
McMichael, Emlenton Gas Co	250
Jew tract, Jamison & Flower No 2	rig
D M Crawford, Daniels & Co No 3	rig
Black, Galbraith & Sherwood	rig
Smith, Weible & Boyce	rig bldg

New Rigs . . . 4
Old Rigs . . . 4
Wells drilling . . . 8
Total . . . 16

Clarion.

Clarion, Clarion Gas Co	800
Troutner, Unknown (old)	rig
Lobaugh, Klingensmith (Callensburg)	450

New rigs . . . 0
Old rigs . . . 1
Wells drilling . . . 2
Total . . . 3

Butler and Armstrong.

Kelly, Kelly & Co	1100
do Edmonds & Co (old)	rig
Reep, Westerman & Co	600
Pontius, Hunter & Cummings	drilling
Zang, Dennison & Co	sand
Martin, C Widger	sand
Kesselman, Reep & Sutton	350
Clouse, P illips Bros	450
Mulligan, Hite & Co	600
do H McGuire No 5	rig
do Showalter & Hartman	rig
Mitt, do do	rig
Ritzert, do do	rig
F Cock, Wm Reed (old)	rig
C Hinchberger do (old)	rig
F Shaffner, do (ld)	rig
M Brown, do (old)	rig
Kirkpatrick, Baldridge Oil Co	600
Bakersville, Pittsburgh Oil Co	800
Gormaly, Gilbert & Vanderlin Murrinsville	500
do do (old)	rig

Baldridge.

Wallace, Fisher Bros No 9 (fishing)	1000
do do No 10	1150
do do No 11	450
do do No 12	150
do do No 13	rig
do do No 14	rig
Marshall do No 1	750
do do No 2	450
do do No 3	250
do do No 4	rig
do do No 5	rig
do do No 6	100
do do No 7	rig bldg
do Armstrong, Boyd&Semple No 2	700
do Connors & Fichtel	600
do Gibson & Co	400
do Greenlee & Co	rig bldg
Bartley, Phillips Bros No 2	680
do do No 3	600
do do No 4	500
do do No 5	rig
Doods, do No 1	rig
Kennedy, do No 1	rig
Bartley, Christie Bros No 1	1100
do do No 2	rig
Henderson, Johnson Bros No 1	sand
do do No 2	rig bldg
do K H McBride	650
do McMullin & Co	rig bldg
Scully, McBride & Campbell	rig
Brown, Bruce, Reep & Sutton	1150
do McTamany & Co	650
do C Neely	100
Moyer, A Shidemantle	sand
Weber, P Schmick	900
Duthett, Straight Run Oil Co	rig

New Rigs	18
Old Rigs	6
Wells drilling	33
Total	57

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	AUGUST, 1884. Wells.	Prod'n.	Dry.	SEPTEMBER, 1884. Wells.	Prod'n.	Dry.
Scio	1	10	0	1	8	0
Alma	2	5	1	2	20	0
Wirt	4	29	0	0	0	0
Bolivar	7	62	0	2	15	0
Clarksville	1	10	0	1	5	0
Genesee	0	0	0	1	10	0
Miscellaneous	1	0	1	0	0	0
Total	16	116	2	7	58	0

BRADFORD FIELD.

Division of Field.	AUGUST. Wells.	Prod'n.	Dry.	SEPTEMBER. Wells.	Prod'n.	Dry.
E. & W. Branches	6	37	0	3	22	0
Kendall Creek	3	26	0	1	8	0
Foster Brook	1	10	0	0	0	0
Four Mile	4	38	0	3	26	0
Indian&Meeks Cr'ks	4	23	1	2	15	0
Cole Creek	4	190	0	1	100	0
Kinzua	5	27	2	1	0	1
Total	27	351	3	11	171	1

WARREN AND FOREST.

District.	AUGUST. Wells.	Prod'n.	Dry.	SEPTEMBER. Wells.	Prod'n.	Dry.
Glade	57	2400	4	29	653	6
Clarendon	8	68	0	6	37	0
Tiona	2	18	0	6	36	0
Cooper	1	10	0	2	0	2
Balltown	3	110	0	3	75	0
Miscellaneous	8	0	8	2	0	2
Total	79	2606	12	48	801	10

LOWER COUNTRY.

District.	AUGUST. Wells.	Prod'n.	Dry.	SEPTEMBER. Wells.	Prod'n.	Dry.
Venango	12	65	2	13	107	1
Clarion	3	19	0	0	0	0
Butler and Armstrong	12	230	2	11	2373	3
Total	27	314	4	24	2480	4

GRAND SUMMARY.

District.	AUGUST. Wells.	Prod'n.	Dry.	SEPTEMBER. Wells.	Prod'n.	Dry.
Allegany	16	116	2	7	58	0
Bradford	27	351	3	11	171	1
Warren and Forest	79	2606	12	48	801	10
Lower Field	27	314	4	24	2480	4
August Total	149	3387	21	90	3510	15
Sept. Total	90	3510	15			
Difference	59	123	6			

OIL men wanting maps of any section of the region will do well to inspect the stock at the office of the PETROLEUM AGE.

THE PETROLEUM AGE has two civil engineers on its staff.

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	OCT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	0	13	0	13	1	11	2	14
Alma	3	12	2	17	2	12	3	17
Wirt	0	4	3	7	2	5	1	8
Bolivar	4	13	2	19	1	15	3	19
Clarksville	0	3	0	3	0	3	1	4
Genesee	1	16	1	18	0	16	1	17
Miscellaneous	0	1	1	2	0	1	1	2
Total	8	62	9	79	6	63	12	81

BRADFORD FIELD.

Division of Field.	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	OCT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	0	17	4	21	1	16	4	21
Kendall Creek	0	10	1	11	0	9	1	10
Foster Brook	0	6	0	6	0	6	0	6
Four Mile	0	12	3	15	1	11	2	14
Indian Creek	2	9	2	13	1	10	0	11
Cole Creek	1	4	1	6	1	4	1	6
Kinzua	0	3	1	4	0	3	0	3
Miscellaneous	0	0	0	0	0	0	0	0
Total	3	61	12	76	4	59	8	71

WARREN AND FOREST.

Division of Field.	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	OCT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	13	5	25	43	7	7	13	27
Clarendon	5	15	5	25	3	14	5	22
Tiona	4	8	6	18	5	9	3	17
Cooper	0	1	2	3	0	1	1	2
Balltown	1	6	3	10	2	7	0	9
Miscellaneous	4	1	3	8	3	2	3	8
Total	27	36	44	107	20	40	25	85

LOWER COUNTRY.

Division of Field.	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	OCT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	5	4	8	17	4	4	8	16
Clarion	2	0	0	2	0	1	2	3
Butler & Armstrong	8	7	16	31	18	6	33	57
Total	15	11	24	50	22	11	43	76

GRAND SUMMARY.

Field.	SEPT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	OCT. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	8	62	9	79	6	63	12	81
Bradford	3	61	12	76	4	59	8	71
Warren & Forest	27	36	44	107	20	40	25	85
Lower Country	15	11	24	50	22	11	43	76
Total Sept. 1	53	170	89	312	52	173	88	313
Total Oct. 1	52	173	88	313				
Difference	1	3	1	1				

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, JULY, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., SEPTEMBER 13, 1884.

CUSTOMS DISTRICTS.	MINERAL CRUDE.		NAPHTHAS.		ILLUMINATING.		LUBRICATING AND PARAFFINE OIL.		RESIDUUM.		TOTAL.	
	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.
Boston & Charlestown, Mass.	.....	....	.....	....	636,913	68,848	29,246	7,506	.....	....	666,159	76,354
New York, N. Y.	4,469,211	328,633	805,574	64,397	34,843,656	3,096,606	657,532	137,777	546,042	36,154	41,322,015	3,663,567
Philadelphia, Pa.	481,278	33,689	184,577	13,142	7,878,959	686,028	55,780	14,102	208,950	8,357	8,809,544	755,318
Baltimore. Md.	.....	....	.....	....	1,467,870	117,855	15,335	4,055	.....	....	1,483,205	121,910
San Francisco, Cal.	.....	....	8,640	1,903	10,710	2,212	620	480	.....	....	19,970	4,595
All other districts.	.....	....	3,149	323	157,311	18,861	8,665	2,073	.....	....	169,125	21,257
Total for July 1884	4,950,489	362,322	1,001,940	79,765	44,995,419	3,990,410	767,178	165,993	754,992	44,511	52,470,018	4,643,001
Total for July 1883	4,458,956	326,243	1,909,099	131,947	40,149,645	3,527,748	663,449	157,736	518,238	35,658	47,699,387	4,179,332
Total for 7 months, ended July 31, 1884	36,995,977	2992,287	4,913,533	418,609	228,972,937	21,531,699	6,583,735	1,340,546	3,130,512	209,137	280,596,694	26,492,278
Total for 7 months, ended July 31, 1883	83326,652	2,092,331	8,140,595	593,175	248,662,130	22,344,040	6,072,865	1,345,939	4,099,158	312,955	295,311,400	26,688,440

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	Sept. 27, 1884. Barrels.	Aug. 23. 1884. Barrels.
London	264,276	285,579
Trieste	76,831	72,963
Seven Continental Ports	1,826,619	1,872,256
Total Stocks afloat and ashore	2,167,726	2,230,798
Decrease in Stocks since August 23		63,072

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS SEPTEMBER 27, 1884.

	Stocks W'k end'g Sept. 27.		Stocks Afloat W'k end'g Sept. 27.		Unloading W'k end'g Sept. 27.		Grand Total Stocks Afloat & Unloading.		Receipts. From July 1.		Shipments From July 1.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	438,477	211,779	14,443	31,997	22,100	20,500	475,020	264,276	174,595	102,939	110,730	121,757
Trieste	11,160	47,392	65,964	29,439	...	...	77.124	76,831	33,594	29,374	40,159	22.948
Bremen	886,669	762,417	44,476	..	50,000	35,000	981,145	797,417	178,903	193,003	186,861	227,167
Hamburg	259,692	197,238	75,139	91,241	51,300	107,400	386,131	395,879	224,023	318,483	297,438	293,790
Antwerp	331,508	142,683	19,966	49,639	84,300	98,500	435,774	290,822	305,588	238,134	184,458	221,241
Rotterdam	62,431	53,587	13,049	5,711	31,000	38,000	106,480	97,298	34,539	46,331	46,244	55,116
Amsterdam	44,329	35,849	22,902	9,502	20,000	30,000	87,231	75,351	71,363	46,202	63,872	53,363
Stettin	80,708	89,846	48,317	26,223	2,500	13,500	131,525	129,569	82,900	129,156	70,563	80,928
Danzig	8,578	33.043	14,303	7,240	4,000	...	26,881	40,283	12,434	40,307	19,820	15.723
Total	1,673,915	1,314,663	238,152	189,556	243,100	322,400	2,155,167	1,826,619	909,750	1,011,616	869,256	947,328

	1881.	1882.	1883.	1884.
Total stocks exclusive Trieste	1,071,037	1,801,390	2,112,392	1,526,442
Total afloat, exclusive Trieste	354,158	309,619	252,595	221,553
Total unloading, exclusive Danzig, London and Trieste	346,000	265,700	265.200	342.000
Total	1,771,195	2,376,709	2,630,187	2,090,895
Afloat and unloading for direct Continental Ports	....	....	....	63,000
" " " Baltic Sea, exclusive Stettin and Danzig	9,000	6,300	41,800	16,000
" " " English harbors, exclusive London	127,700	114,000	186,900	89,200
Grand Total	1,907,895	2,497,009	2,858,887	2,259,095

CRUDE QUOTATIONS FOR SEPTEMBER, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Highest.	Lowest.	Closed.	Oil City. Opened.	Highest.	Lowest.	Closed.	New York. Opened.	Highest.	Lowest.	Closed.	Pittsburgh. Opened.	Highest.	Lowest.	Closed.
M	1	89¾	90¾	88⅝	88¾	90	90⅞	88⅞	89	91	91	88¾	88¾	90⅛	90¾	89	89
T	2	89	89⅞	88	89¾	88¾	89¾	88⅝	89⅝	88⅞	89⅞	88⅞	89⅝	88¾	89¾	88	89⅝
W	3	89¾	92¼	89¾	92	89⅞	92¼	89⅞	92	90	92¼	90	91⅞	90	92	89⅞	91⅞
T	4	90⅞	91	87⅞	88	91¾	91¾	87¾	87¾	91	91	87¾	87¾	90½	90¾	88	88
F	5	87¼	88¾	85⅞	86	87½	88¾	85⅝	85⅝	87¾	88⅞	86	86	87	88¾	85¾	86
S	6	85½	86¼	77¾	79	85¾	86⅜	77¾	79⅛	84¾	86⅜	78	79⅜	85⅞	86¼	78	79½
M	8	79	79	73⅜	76⅞	78	78⅝	73⅜	77¼	79	79	73⅛	76¾	77½	78½	73¼	77
T	9	76	79¼	73¾	77½	76	79½	73⅝	77⅜	76½	78⅞	73⅞	77⅜	76½	79¼	76¾	77¾
W	10	77	78⅜	74⅛	74⅜	77½	78⅜	74⅜	74½	77½	78⅜	74⅜	74½	76⅞	78⅜	74⅜	74½
T	11	73¾	76	72	74	74	75¾	72⅛	74⅛	74	75¾	72¼	74⅛	73½	75¾	72½	74⅛
F	12	73¾	76¾	73¾	75⅝	74⅜	76⅞	74⅛	75½	74	76⅞	74	76¾	74	76¾	74	75¾
S	13	76¾	79	76¾	78⅝	76¾	79	76¾	78⅝	76½	79	76½	78⅜	76½	79	76½	78⅜
M	15	79	79	75½	75¾	79½	79½	75¾	75⅞	79	79	75⅞	75⅞	79½	79½	75¾	75¾
T	16	75½	77¼	74	75⅝	76	77¼	73⅞	75½	76	77¼	73¾	75⅝	75¾	77¼	73⅞	75⅝
W	17	76	77¾	74⅞	77¼	75⅞	77½	74⅞	77¼	75¾	77½	74¾	77⅜	75¾	77½	74⅞	77⅛
T	18	77¾	77¾	76	76	77½	77¾	76⅛	76⅛	77½	77⅝	76	76	77¾	77¾	76⅛	76⅛
F	19	76¼	76⅝	75¼	76⅜	76⅛	76¾	75¼	76⅜	76	76¾	75¼	76⅜	76¼	76⅝	75¼	76⅜
S	20	76¾	77⅜	74½	75	76¾	77⅜	74½	74½	76¾	77⅜	74½	74¾	76¾	77⅜	74¾	74⅞
M	22	72	73½	70¾	71⅞	73½	73½	71	71⅝	74	74	71	71¾	72⅝	73	71¼	71¾
T	23	72⅜	75¾	72	74⅞	72½	75¾	72¼	75	71	75⅜	71	74⅝	72¼	75⅜	72	74¾
W	24	74¾	75⅞	72⅞	74¼	75	75	72⅝	74⅛	74	75	73	74⅞	75	75	73¼	74¼
T	25	74½	75½	74	75¼	74¼	75¾	74	75	74¼	75½	74⅛	75⅜	74¼	75⅝	74⅛	75⅜
F	26	75¾	76¼	73⅜	73⅜	75½	76¼	73⅜	73½	75⅞	76¼	73¼	73⅝	75½	75⅞	73½	73½
S	27	73¾	74⅛	71	71¾	74	74⅛	70⅞	71⅞	73¾	74	71⅞	71⅞	74	74¼	70⅞	72
M	29	71⅝	72⅛	70½	71	71¾	72¼	70½	71⅛	71⅞	72⅛	70½	71	71¾	72⅛	70½	71
T	30	72	74	71⅝	73⅜	72	74	71¾	73½	72	73⅞	71⅞	73½	71¾	73⅞	71¾	73½

SEPTEMBER PRODUCTION REPORT.

Reports were received showing the amount of stocks at 6,260 Bradford wells September 1st, and 6,255 October 1st. On account of the sale of oil property the same parties reported a smaller number of wells October 1st. On the first of September the average stocks per well was 54.6 barrels and the average on the first of October was 53.5. The figures compared show an average reduction per well of 1.1 barrels. The above figures are tabulated as follows:

Time.	No. Wells.	Gross Stocks.	Average per Well.
September 1, 1884	6,260	341,919	54.6
October 1, 1884	6,255	334,894	53.5
Difference	5	7,025	1.1

The number of wells in the Bradford field connected with the pipe lines Oct. 1st is estimated at 13,338. Presuming that the wells heard from afford a fair average for the field, the total stocks at wells in the Bradford district were decreased 14,672 barrels during September, a daily average reduction of 473 barrels. The daily average pipe line runs in the Bradford district by the National Transit and the Tidewater lines for September were 33,449 barrels. Subtracting the decrease in stocks, a fair estimate on Bradford's average daily September production would be:

	Barrels.
Average Daily Pipe Line Runs	33,449
Average Daily Decrease of Stocks at Wells	473
Bradford's Sept. production, est.	32,976
do Aug. do do	33,353
do July do do	34,031
do June do do	33,753
do May do do	33,922
do April do do	32,442
do March do do	31,912
do February do do	32,378
do January do do 1884	31,806
do December do do	34,470
do Novemb'r do do	35,026
do October do do	35,654
do Septemb'r do do	34,966
do August do do	35,085
do July do do	34,537
do June do do 1883	35,270

According to the above estimates, Bradford's September production fell off 377 barrels from the August figures. The activity maintained in the cleaning out of old wells and the changing of wells from flowing to pumping, has nearly sustained the Bradford production for months.

THE ALLEGANY FIELD.

Reports of stocks in the Allegany field are tabulated as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
September 1, 1884	1,126	43,588	38.7
October 1. 1884	1,126	42,498	37.7
Difference	0	1,090	1.0

The 1,126 Allegany wells from which stocks were received, show a decrease of one barrel per well in September. The number of producing wells in the Allegany field September 1st is estimated at 3,752 and 3,759 October 1st. From the preceding data the following statement is made:

Time.	No. Wells.	Average per Well.	Gross Stocks.
September 1, 1884	3,752	38.7	145, 02
October 1, 1884	3,759	37.7	141,714
Difference	7	1.0	3,488

According to these figures the total stocks at wells in the Allegany field decreased 3,488 barrels during September, an average daily decrease of 112 barrels. The pipe line runs in the Allegany field averaged 9,989 barrels. Subtracting the decrease in stocks, Allegany's estimated daily production for September was 9,877 barrels.

	Barrels.
Allegany's September production is estimated at	9,877
Allegany's August production is estimated at	10,384
Allegany's July production is estimated at	11,218
Allegany's June production is estimated at	11,108
Allegany's May production is estimated at	11,547
Allegany's April production is estimated at	11,848
Allegany's March production is estimated at	11,768
Allegany's February production is estimated at	11,607
Allegany's January production is estimated at	11,263
Allegany's December production is estimated at	12,437
Allegany's November production is estimated at	12,678
Allegany's October production is estimated at	13,089
Allegany's September production is estimated at	12,335
Allegany's August production is estimated at	12,264
Allegany's July production is estimated at	12,345

WARREN, FOREST AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Warren, Forest and the Lower Country. The number of wells on the first of each month, with their averages, are contained in the following statement:

Field.	No. Wells. Sept. 1.	No. Wells. Oct. 1.	Average per Well. Sept. 1	Average per Well Oct. 1.
Clarendon & Tiona	146	155	64	53
Cherry Grove	50	50	94	79
Cooper District	163	163	133	94
Lower Country	95	95	59	63
Miscellaneous	146	147	184	157

Accepting the outside runs, which are partially made up of the Wardwell and Baldridge runs, as representing the production, an estimate on the yield of the field for August and September would be as follows:

Field.	Aug. Barrels.	Sept. Barrels.
Allegany	10,384	9,877
Bradford	33,353	32,976
Outside runs	22,830	22,514
Total	66,567	65,367

The above figures show a decrease in the production of the entire region of 1,200 barrels per day. In these estimates no account is taken of the "dump oil" loaded on the cars direct from the wells at Emlenton and other points along the Allegheny river.

The old scouts are holding the fort at Phillips City in the Baldridge country, timing the flows of the great gushers. Under the new order of things their work is too easy to be interesting and borders on the commonplace.

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EASTWARD.			IN EFFECT MAY 18, 1884.			WESTWARD.		
No. 1	No 5.	No. 7.	Central Standard Time.			No. 8.	No. 6.	No 38
A. M.	P. M.	P. M.	STATIONS.			P. M.	A. M.	P. M.
7 20	3 20	6 20	Lv. . . .	Toledo	. . . Ar.	11 30	10 00	2 40
11 34	7 40	1 40	" . . .	Creston	. . . "	7 40	1 20	10 30
4 55	8 02	4 55	" . .	New Comerston	. . Lv.	4 00	10 15	
7 48	11 00	7 48	" . . .	Macksburg	. . . "	12 55	7 15	4 4
9 05	12 20	9 05	Ar. . . .	Marietta	. . . "	11 40	6 00	3 2
P. M.	P. M.	P. M.				A. M.	A. M.	P. M

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M. D. WOODFORD, General Manager. JAMES M. HALL, Gen'l Pass. Agent.

THE PETROLEUM AGE.

Vol. III. BRADFORD, PA., NOVEMBER, 1884. No. 10

MAKING GAS FROM CRUDE PETROLEUM.

Petroleum has long been looked upon by the scientific and industrial world as one of the best materials from which to obtain light and heat, and, as time passes, the assertion that in the future it will do all that coal now does is received with steadily increasing confidence.

This belief is strengthened by the many peculiarities which characterize both the product and its surroundings; when properly treated it is one of the best known illuminants and possesses great heating power, and it can be brought at a minimum expense from those vast reservoirs in which Dame Nature has kindly placed it in inexhaustible quantities. But the proper purification of the crude material, the elimination of all those constituents which decrease the effects following combustion, has proved to be an obstacle of no mean importance, since, heretofore, the accomplishment of this object could only be attained at a cost that was practically prohibitory.

Although we have for many years been dependent upon mineral oil for a large portion of our light, yet gas made from this source has not, until recently, been introduced upon an extensive scale, mainly because of the difficulties attending its manufacture and its poor quality. It is a simple matter to place oil in a retort, and by the aid of a little fire obtain a gas; but to so purify that gas that it will contain no elements except those which promote combustion is a part of the problem which has been long studied unsuccessfully.

The North American Petroleum Gas Company, of 145 Broadway, this city, has produced an apparatus by which a gas having superior heating and lighting qualities is generated at a small cost comparatively from crude petroleum. The apparatus is simple in all its parts, requires but little attention, being almost automatic in operation, and from it arises none of those odors which are so conducive toward rendering the ordinary gas works a nuisance in any neighborhood.

The oil, in the same condition as when it left the well, is raised by means of a small hand pump from a barrel placed outside of the building to a small tank located in a room adjoining the retort room. This tank is placed at such an elevation that the oil will flow to the retort, which it enters through the dome, spreading and falling to the bottom of the upper compartment, the floor of which, though at a cherry red heat, is covered with a substance which prevents "spluttering," and at the same time removes heavier impurities. The gas here generated then passes through other chambers, arranged vertically, in which any remaining impurities are detained, and finally issues from the retort through a pipe which conducts it to a partitioned water box placed alongside of the retort. Here the gas is separated to insure each particle coming in contact with the water. The gas is so rich that before it can be used for ordinary purposes it must be mixed with about 40 per cent. of air.

The furnace is placed in the centre of the retort, immediately beneath the chambers, and the grate dumps into a long water trough. The heat is so distributed and utilized in its passage through the retort that all parts are subjected to just the right degree, while the consumption of coal is reduced to the lowest point. By means of flues and dampers the heat in any particular section can be controlled at will. The dome of any retort can be readily raised by the aid of a traveling block and tackle, thereby exposing the interior, which can then be cleaned, and the substance collecting the impurities renewed. So slight is the attention required that a man and boy can easily take care of ten retorts.

This apparatus generates from 80 to 100 feet of gas from one gallon of crude petroleum, which costs four cents; and each retort yields from 150 to 250 feet per hour. The gas is a fixed gas, being unaffected by either cold or great pressure.

Since it mixes readily with coal gas, an inferior quality of the latter can be raised to any desired standard of illuminating power by the addition of a small amount of petroleum gas. It can be mixed with coal gas either by passing both together through the purifiers, or by passing the petroleum gas directly into the holder,

this forming a thorough mixture; the latter is the preferable method. The company claims that one barrel of crude petroleum will produce gas greater in amount of illuminating value than the coal gas produced from two tons of the best Pennsylvania gas coal; less fuel being required, no lime, and the handling of material being greatly reduced. A comparison—made by the chemist A. T. Schuessler—of this gas with ordinary coal gas shows that the former is 4.90 times superior in illuminating power, and therefore one cubic foot of the former will give almost as much light as five cubic feet of the latter.

Through the courtesy of the president of the company, Mr. Isaac D. Guyer, we recently had an opportunity of comparing the illuminating power of petroleum gas with water gas, issuing from burners of the same size. The petroleum gas was under a pressure of one inch, while the other was two and a half inches. The petroleum gas flame was much larger, more brilliant, and of a purer color than the other.

An important advantage possessed by this gas arises from the fact that the plant necessary for its manufacture upon a large scale can be erected at a cost much less than that required by the ordinary gas works; and in addition, the space occupied is small in comparison.—*Scientific American.*

PETROLEUM GAS MANUFACTURE AT TITUSVILLE.

In connection with the preceding article the following letter from Mr. E. T. Roberts, of Titusville, Pa., describing the invention of Peter English, of Ontario, Canada, and its successful use at Titusville, shows how eagerly the idea of manufacturing gas from petroleum is being pursued, and holds forth new prospects of the increased consumption of our abundant crude supply. An article in the September AGE gives the comparative cost of coal and petroleum gas, as ascertained by practical experiments in the State Public School buildings at Coldwater, Michigan:

MESSRS. MCMULLEN & SNELL.—In answer to your inquiries I submit some of the main facts in regard to the process of gas-making which has recently been introduced into the Titusville Gas Works. This process is not, as many suppose, a process of making gas from petroleum alone, but from petroleum and water. That gas can be made from water by passing it over red hot coal, coke or iron in closed retorts is by no means a new idea, many patents having been granted to inventors for devices to accomplish this result, whose machines are in successful operation to-day; but the particular machine which our gas company has adopted is the invention of Peter English, of Canada, and is superior to any others with which I am acquainted in simplicity and economy in operating. It consists essentially of a large upright iron cupola lined with fire-brick. About midway in the inside of this retort is a fire-brick partition dividing the machine into two separate chambers. Around this partition the gases formed below have to pass before they can reach the upper chamber, an arrangement which is found to add considerably to the effectiveness of the machine. In the upper chamber is a construction of fire-brick known as the "superheater," composed of rows of brick with open spaces between through which the gases are made to pass and are then exposed to a large surface of hot fire-brick. At the top of the machine are two openings, one into the chimney and the other leading to the hydraulic main.

The process of making the gas consists of two distinct operations. The lower chamber of the machine is filled with fuel, preferably coke, to within a few feet of the dividing partition and the coke is ignited and raised to a white heat by means of a blast of air introduced at the bottom. While the air blast is in operation the top of the machine opens into the chimney and communication with the hydraulic main is shut off. When the machine has acquired the proper temperature the opening into the chimney is closed and communication established with the hydraulic main. A jet of steam is then passed from below through the bed of glowing coke, while a stream of crude petroleum is sprayed upon the top of it. When the steam comes in contact with the coke at a high temperature it is decomposed into its elements—hydrogen and oxygen; the hydrogen passing off mainly uncombined and the oxygen uniting with the carbon of the coke to form carbonic oxide (CO) together with a small percentage of carbonic acid (CO_2). Meanwhile the petroleum poured in at the top of the coke has been vaporized by the intense heat and the gases thus formed unite with the gas made from the steam and pass into the upper chamber. It is difficult to say exactly what reactions take place in the interior of the machine when the petroleum meets the surface of the incandescent coke, but the main products formed are hydrogen, marsh gas, the

illuminants and various other gases of the paraffine series. All of these together with the water gas pass through the superheater where any remaining vapors of steam or oil are turned to gas This gas then flows out of the machine to the hydraulic main and washer, where the impurities, any free carbon, tar or condensable gases are removed. The resulting gas is found to be pure enough for consumption.

Passing on to the results we have accomplished with this process. The machine will cost about $3,000 to build and put into place. It is capable of delivering into the holder 50,000 feet of gas per day of twelve hours. It takes fifteen minutes to raise it to the required temperature; then the steam and oil being turned on gas is made for the next fifteen minutes, and so on. In this way it will produce about 5,000 feet of gas every half hour. One man is all that is required to run it.

As the result of numerous experiments we can give the following figures: In making 24-candle power gas the machine consumed for every thousand feet of gas produced, 50 lbs. of Connellsville coke and 4½ gals. of crude petroleum. The air blast was run by a small steam engine, whose boiler supplied all the steam required for gas-making at the same time. At our works the gas is passed through purifiers before it is delivered to the consumers, but so free from impurities is gas thus made that the purifiers have been changed but twice during the five months we have been using this system. The following is an analysis of the gas of 24-candle power made by this machine and taken from one of the city mains. It is a very fixed gas; does not condense in the pipes or coat them with naphthalem or other deleterious substances. It does not smoke and is free from sulphur and ammonia.

ANALYSIS.

Illuminants	11.09
Carbon Oxide (CO)	23.20
Carbonic Acid (CO_2)	1.11
Ammonia	0.
Hydrogen	48.50
Marsh Gas	16.10
	100.00

A notable feature of this system is the simplicity of the machine. After a few weeks apprenticeship an ordinary workman will learn to judge the heat and regulate the supply of steam and oil so as to make gas of uniform quality and composition, thereby obviating the employment of high-priced skilled labor. As for the economy of this process I shall add but one word. While making gas of 17 to 18-candle power the price charged was $2.75 per 1,000. We now furnish 24-candle power gas for $1.50 per thousand.

Experiments have been made with other hydrocarbons in the place of petroleum, but none give such satisfactory results. In one trial 8 gals. of naphtha were used per thousand feet to produce the same quality of gas that could be made with 4½ gals. of the petroleum. Anyone interested in this system can see it in operation at the gas works here or in Batavia, N. Y., where two machines will soon be erected. After five months of successful operation we feel confident of the merits of this process and of its great economy, especially when applied to small gas works. Yours truly,

E. T. Roberts, Sec'y.

LAYING AN OIL LINE.

When the National Transit Co. concludes to construct a pipe line their engineers survey the route and the rights of way men follow to negotiate with the land owners, who are generally yeomen. Oftentimes a densely ignorant farmer objects to signing the contract through fear. He has deep-rooted ideas regarding "doc'ments." The Transit agent slowly and repeatedly reads the clauses, "hereby agrees to pay any damages which may arise to crops or fences from the laying, maintaining or operating of said pipe lines; said damages, if not mutually agreed upon, to be ascertained by three disinterested persons." Though it is further agreed that the lines are to be buried below the plowshare, the farmer obstinately refuses to make "his mark." The consideration per rod is sufficient and all the conditions of the agreement are fair he acknowledges. But he never did sign "doc'ments" and he does not propose to begin now that his years are frosty. The rights o' way man smiles blandly, for he is a diplomat, as he clasps the old farmer's hand good bye.

With the intelligent farmer who is enabled to read his weeklies by the soft light of petroleum the company have no trouble. He is given the contract to haul the pipe over his farm and that, perhaps, of his obstinate neighbor. Then when the "gangs" come he is well paid for boarding them.

The laying of a six inch line is a work of considerable magnitude. Once the pipe is on the ground a gang of men place the "joints" in position. The connecting gang is composed of usually twenty-two men with a trenching gang of five men immediately in advance. The trenchers dig passages under railroads, roadways

or through land which can not be even temporarily obstructed by the line. When a section of pipe is placed in position one of the workmen oils the threads, another "sights" it, eight of the gang turn it with their leather-like hands until the foreman calls "tongs." Four pair of the great tongs are then placed on the section to be connected while a fifth seizes the main line to hold it in position. To screw it up or connect the section twelve men operate the four tongs. Their movements are regular as if in unison with the clanging sounds running along the hollow band of iron. The foreman is usually a broad shouldered man, grim of feature and strong as any of his men. As an evidence of his character he wears a steel watch chain. He is a man of but few words and seldom smiles, but when the gang are jabbering about "that tough pie crust Mike," and cracking jokes to the detriment of their cook, his features expand and contract just as the line does in July and January.

When the gang arrives at the farm of an obstinate owner they are sometimes met with warlike demonstrations. It is then that the gang is good natured. Recently a scene of this kind was interesting some spectators when an old pipe line superintendent came along. He approached the warrior farmer, who soon gracefully yielded and was so pleased with the pleasant superintendent that he said, "Here is dem brass dings your men so much want." The old gentleman had stolen about half a bushel of valuable brass fittings from the lines near one of the pump stations. However, when a contrary farmer sees the long line like miles of stove pipe stretching over his neighbors' farms and when 'Squire Scraggins explains that it is harmless he yields the situation to the gang, who perchance will board at his house, assist in making cider and make so merry that he is loth to see them force their serpentine work over the hills and far away.

As the veteran oil region teamster listens to the oil surging and throbbing in the completed line he endeavors to comprehend the achievement. He can scarcely believe that eighteen thousand barrels of oil can thus be transported invisibly hundreds of miles every twenty-four hours. Then the rushing oil recalls life on the creek. The thousands of teams; the frightful roads; the sulphureous oaths which taint the region to this day and the proud men who drove in the famous Avery train. And he is prone to blaspheme when he remembers how the thousands of teams and the golden prospects of their owners vanished with the introduction of the first pipe line, of which the six inch conduit is the result. VAN WINKLE.

PROFITS OF GERMAN OIL WELLS.

The natural oil wells of Germany have hitherto served merely the purposes of stock jobbers without bringing profit to investors. The production of Lobsann and Schwabweiler in the Alsace does not exceed an annual value of $60,000, the cost of obtaining the crude oil being 6.6 cents per gallon. The Holstein oil districts have not shown a better result, although above $240,000 have been expended in attempts to develop them; the expense of bringing the oil to the surface is 11.34 cents per gallon. An Anglo-Continental oil company, unsuccessful elsewhere, is now boring at Tegernsee in the Bavarian Tyrol, where a spring supplying about eleven gallons daily has been known for over 450 years, but whether it will be found in workable quantities is at present doubtful. The most noted of the German oil fields, Oelheim, has brought profits to company promoters in London, Bremen and Berlin, but none to investors; the mark shares of the Berlin company have depreciated 71.5 per cent. The price of the German oil in the different markets is as follows, including barrels: Amsterdam and Rotterdam, 10.75 florins per 100 kilograms, or 12 9 cents per gallon; Antwerp, 22 francs per 100 kilograms, or 12.74 cents per gallon; Bremen, 8.55 reichs marks per 100 kilograms, or 12.31 cents per gallon; Hamburg, 8.65 per 100 kilograms, or 12.60 cents per gallon; Stettin, 9 reichs marks per 100 kilograms, or 12.96 cents per gallon; Berlin, (including 6 marks import duty) 26 marks per 100 kilograms, or 18.72 cents per gallon; Mannheim-on-the-Rhine (the chief South German market), 27 marks per 100 kilograms, or 19.44 cents per gallon.

HENRY MCSWEENEY, ESQ., one of Bradford's prominent young lawyers, has been appointed Attorney for the National Transit Co., in place of W. D. Hancock, resigned. Mr. McSweeney assumed his duties on the first of November.

L. KREAR & Co.'s well near the southwest corner of lot 741, in Cherry Grove Township, was completed Nov. 10, and is a large gasser.

OIL men wanting maps of any section of the region will do well to inspect the stock at the office of the PETROLEUM AGE.

THE REFINED MARKET.

The refined market during October fluctuated in sympathy with the crude, but with only slight variations of ⅛ to ¼ of a cent, never getting above 8 cents in New York or falling below 7¾. Owing to the shifting changes in the speculative value of certificates orders for export have been very light. The foreign buyer evidently considers himself master of the situation, but refiners are inclined to adhere strictly to the quotations which represent the lowest purchasing prices. Ocean freight rates have ruled unusually light, and with a different state of affairs in the Thorn Creek region, a good brisk foreign trade might be confidently expected.

Refined in cases has been advanced to 9¼ cents for plain brands, and a fair amount of business has been done.

The demand for refined in cases, from China, Japan and the East Indies, has been steadily on the increase all the year, as is shown by the following figures from G. H. Lincoln's monthly circular:

	1884.	1883.
To China	1,252,910	953,770
" Japan	1,145,248	1,959,268
" Bombay, Calcutta, Rangoon, etc,	2,994,297	1,421,748
" Java, Angier	2,621,315	2,539,433
Total	8,013,770	6,874,219

The Domestic trade in refined has been very active and quotations firmly maintained. Naphtha and Gasoline are in good request by the home trade, with Residuum well inquired after by the English exporters.

S. C. Joyce & Co., London, under date of Oct. 23d, say: "In analyzing the stock on this side, it will be found that the supply of available contract oil is very small indeed, so much so that, had there been the old degree of speculation this season, a corner for some pence higher prices may easily have been effected, but as it is, the shorts have found it an easy market to depress. Thus out of a stock of 174,000 barrels, probably a third is expired certificate oil, good for trade purposes, but not for speculative contracts; then there is Water White oil, and Daylight, and Tea Rose, held at and costing a premium, so that probably the stock of available oil is only 70,000 to 80,000 barrels to commence the depth of the season with, at a much under import price. Very little would cause a ½d. or so advance, but another fall of ¼d. or so would make it comparatively safe for any one to handle largely for a rise. The closing prices are: Spot $6\frac{7}{16}$d. to $6\frac{13}{16}$d., November 6½d.; first three months 6⅝d. to $6\frac{11}{16}$d."

OCTOBER QUOTATIONS.

		New York.	Philadelphia.	Baltimore.	London and Liverpool.	Bremen.	Antwerp.
		Cts.	Cts.	Cts.	Pence.	Marks.	Francs
W	1	7⅞	7¾	7¾	6⅝	7 50	19⅛
T	2	8	7¾	7¾	6⅝	7 50	19⅛
F	3	8	7⅞	7⅞	6⅝	7 50	19⅛
S	4	8	7⅞	7⅞	6⅝	7 50	19⅛
M	6	8	7⅞	7⅞	6⅝	7 50	19⅛
T	7	8	7⅞	7⅞	6⅝	7 50	19¼
W	8	8⅛	8	8	6⅝	7 50	19¼
T	9	8	8	8	6⅝	7 40	19⅛
F	10	8	7⅞	7⅞	6⅝	7 40	19⅛
S	11	8	8	8	6⅝	7 40	19⅛
M	13	7⅞	7⅞	7⅞	6⅝	7 40	19⅛
T	14	7¾	7¾	7¾	6⅝	7 30	19
W	15	7¾	7¾	7¾	6⅝	7 30	19
T	16	7¾	7¾	7¾	6⅝	7 40	19
F	17	7¾	7¾	7¾	6⅝	7 50	19⅛
S	18	7⅝	7⅝	7⅝	6⅝	7 50	19⅛
M	20	7¾	7¾	7¾	6⅝	7 40	19¼
T	21	7⅞	7⅞	7⅞	6½	7 50	19⅛
W	22	7⅞	7⅞	7⅞	6½	7 55	19½
T	23	8	7⅞	7⅞	6½	7 55	19½
F	24	8	7⅞	7⅞	6½	7 55	19½
S	25	8⅛	8	8	6½	7 55	19½
M	27	7⅞	7⅞	7⅞	6½	7 50	19½
T	28	7¾	7¾	7¾	6½	7 45	19⅜
W	29	7¾	7¾	7¾	6¾	7 40	19⅜
T	30	7¾	7¾	7¾	6⅝	7 40	19⅜
F	31	7¾	7¾	7¾	6⅝	7 35	19⅛

CRUDE MARKET FOR OCTOBER.

The petroleum trade is still anxiously watching developments in the vicinity of the Phillips gusher at Baldridge. And throughout October the market has moved up and down in accordance with the bullish or bearish news from Butler county. The story of the wells is recorded in the fluctuations in the table of crude quotations. October 27 the market opened at 81 cents. The Armstrong, Boyd & Semple No. 2, reported dry the preceding week, was shot that day and responded at the rate of three hundred barrels an hour. The market immediately sold down to 72⅜ cents and the following day fell to 64.

The month commenced with crude ranging from 73 to 75 cents, and the price was held above 72 cents for the first ten days. The third week there was a weakening of values, consequent upon bearish news from the Connor & Fishell and other wells. The fourth week opened with a sharp advance of ten cents the first day. The bears were thoroughly frightened by reports that holders of certificates had combined to call in the oil loaned and in the absence of well news of a decidedly bearish character, there was a grand rush of the "shorts" to cover. From the 20th to the 27th there was an advance of nearly 20 cents, when the torpedoing of the Armstrong well started another Waterloo, which carried prices backward full seventeen cents. A little rally followed, prices recovered somewhat and the month closed at 71⅞ to 72 cents. The highest price of the

month was 82 cents, which was reached on the 27th, and the lowest 59⅛ on the 18th of the month.

The average price for the month on the floor of the Bradford Exchange was 71 cents, against 78 cents for September and 81⅛ cents for August. The average price for October one year ago was $1.11⅛.

THE CLEARANCES.

	October. Barrels.	September. Barrels.	August. Barrels.
Bradford Oil Exchange	123,458,000	131.922,000	143,426,000
Bradford Prod. Pet	28.500,000	28,278,000	44,678,000
Oil City	189,453,000	207,452,000	215,992,000
New York, N. Y. Pet	148,374,000	164,612,000	183,682,000
New York, National	295,720,000	328,357,000	308,916,000
Pittsburgh Oil (old)	———	6,000,000	8,108,000
Pittsburgh Petroleum (new)	106,358,000	120,000,000	120,002,000
Total	891,871,000	986,621,000	1,024,804,000

MACKSBURG IN OCTOBER.

As a battle ground for the opposing forces during the political campaign, Ohio has demanded some attention from the oil men, but interest in its oil field has waned since the May days. Prior to the 1st of October bordering lines were found for the northern and eastern limits of the field, and late developments indicate that an extension can not be looked for to the south and southeast. Brown & Co.'s well near Elba came in dry. Eight wells were finished in October, having a production on the last day of the month of 115 barrels. On the first day of the present month there were nine rigs up and building and sixteen wells drilling. Below is a list of the

WELLS COMPLETED.

Farm. Operator.	Barrels.
Mosher, Porter & Gilmor	dry
Near Elba, Brown & Co	dry
Scham, Nesbitt & Co	dry
Enoch Township, Barnsdall & Co Lot 21	dry
Crawford, Borckman & Laney Bros	20
Smithson, Macksburg Oil Co	25
Atkinson, Stevens & Co	30
Schilling, Austin & Co	40
Wells	8
Production	115
Dry	4

RIGS UP AND BUILDING—WELLS DRILLING.

Farm. Operator.	Depth.
Pod Stevens, J C Lineman	rig bldg
Rice, George Rice	rig
Dutton, M. B. McManus	rig
Atkinson, Clark & Whitney	rig
Smith Dutton, Best Bros	1100
Coal lands, Ohio Oil Co	1400
Derrold, Bradley & Lockwood	1250
P Stevens, J C Lineman	750
Perkins, "	1300
Clark, Mills & Mullin	700
G Stevens, "	1400
Morrow, John Denman	rig
Schilling, "	rig bldg
Warren, Bradley & Stevens	rig
Gordon, Syndicate	rig
Clinedinst, J. D. Wolfe	rig
" C J Garvey	1200
Perkins, "	500
Crawford, Borckman & Laney	1300
" "	900
Atkinson, Clark & Whitney	1000
Alger, A McConnell	100
Smithson, Macksburg Oil Co	1000
Decker lot, Willis Decker	1200
Rice, George Rice	1100
Rigs up and building	9
Wells Drilling	16
Total	25

THE AVERAGE PRICE OF CRUDE.

The following table gives the average price of crude certificates, on the floor of the Bradford Oil Exchange, since March 1, 1879:

	1879	1880	1881	1882	1883	1884
January	. .	110 1-5	95	83 .	92¾	111⅓
February	. .	103¼	89¼	85¼	101	104⅜
March	86	89	82⅞	80⅞	97½	100⅛
April	78⅜	76⅝	84⅛	78¼	92⅝	94
May	73½	80¼	81½	70	99⅜	85½
June	68⅜	100¼	81	54½	117¼	68¾
July	69⅞	101¼	76½	57⅝	108	63½
August	67¼	90¾	78⅔	58⅔	108⅔	81 1-5
September	69¼	95½	92¼	71⅓	112½	78
October	88⅛	96¼	92¾	93⅝	111⅛	71
November	105⅜	91¼	82⅓	114¾	114 4-5	. . .
December	113¼	92⅜	83¾	95¼	114⅓	. . .

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590
April, 1884	34,370	12,261	19,162	65,793
May, 1884	34,946	12,193	19,549	66,688
June, 1884	35,701	11,672	19,977	67,350
July, 1884	34,718	11,114	20,870	66,702
August, 1884	33,782	10,384	22,830	66,996
September, 1884	33,449	9,989	22,514	65,952
October, 1884	31,500	8,802	22,762	63,064

SUMMARY of the statements of the National Transit Co., for October and September, 1884.

	OCTOBER.	SEPTEMBER.
Receipts from all sources	1,724,549.61	1,742,726.96
Deliveries	2,246,091.22	2,060,341.65
Gross stocks end of month	38,809,635.06	39,711,600.37
Sediment and surplus	2,330,779.62	2,651,465.29
Total liabilities end of month	36,478,855.44	37,060,135.08
Outstanding acceptances	28,652,312.00	29,721,715.30
Credit balances	7,826,543.44	7,338,419.78

The above receipts from all sources for October were made up as follows:

Transferred from United Pipe Line as reported to N. F. Hilton. representing Conference of Oil Exchanges	5,182.68	
Less sediment and surplus	. . . .	
Net amount from United Pipe Lines		5,182.68
Runs from wells		1,719,366.93
Received in iron tanks		. . . . .
Total		1,724,549.61

The above receipts from all sources for September were made up as follows:

Transferred from United Pipe Lines, as reported to N. F. Hilton, Esq., representing the Conference of Oil Exchanges	12,484.54	
Less sediment and surplus	11,324.37	
Net amount from United Pipe Lines		1,160.17
Runs from wells		1,741,566.79
Received in iron tanks		. . . . .
Total barrels		1,742,726.96

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to Nov. 1, for the years 1883, 1884, were as follows:

	1884. GALLONS.	1883. GALLONS.
From Boston	6,228,507	3,869,353
Philadelphia	86,714,992	64,911,245
Baltimore	12,577,790	8,710,505
Richmond	....	173,449
Total	105,521,289	77,664,552
From New York	323,568,156	361,362,047
Total exports from United States	429,089,445	439,026,599

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to November 8th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
GREAT BRITAIN.—London	13,742,147	32,794,583
Liverpool	6,047,152	8,643,830
Bristol	2,741,518	3,065,478
Ireland	5,084,003	5,087,230
Other ports	6,090,380	6,088,538
GERMANY—Bremen	27,009,928	39,948,755
Hamburg	30,540,536	31,732,591
Konigsburg and Stettin	6,591,480	4,766,126
Dantzic	937,366	1,110,141
Other Ports	1,372,183	835,570
FRANCE—Marseilles	....	....
Havre	....	....
Norway and Sweden	5,454,902	7,189,009
Russia	188,822	1,539,156
Denmark	7,172,037	8,545,271
Belgium	27,358,787	35,068,806
Holland	14,238,147	13,443,340
Spain	350,960	147,770
Portugal	1,133,434	1,705,959
Gibraltar and Malta	3,227,780	1,965,998
Italy	1,898,511	2,009,896
AUSTRIA.—Trieste, etc	4,439,498	11,900,393
Greece	1,095,010	1,280,410
Turkey in Europe	3,110,590	3,292,551
Turkey in Asia	2,780,475	3,080,742
India	25,792,500	13,534,900
China, Japan, etc	19,848,790	23,361,430
East Indies	25,656,770	28,051,720
AFRICA.—Alexandria, etc. E	3,183,420	2,420,590
Canary Islands	167,379	127,845
Other Ports	3,222,120	4,673,389
Australia	2,184,064	1,640,404
New Zealand	740,841	516,460
Sandwich Islands	204,080	202,500
SOUTH AMERICA.—Brazil	4,674,166	4,763,634
Argentine Confederation	4,470,000	3,271,050
Chili and Peru	756,414	1,248,800
U. S. Columbia	367,716	267,794
Venezuela	586,983	557,831
Other Ports	55,301	117,461
Central America	297,611	209,306
Mexico	987,340	1,204,771
British North American Colonies	1,088,547	1,089,507
Cuba	372,966	210,746
British West Indies and Br. Guiana	1,313,384	1,421,582
Other West Indies	1,075,236	816,572
Total . . . . . Galls.	269,641,274	314,970,235

CRUDE.

	1884.	1883.
FRANCE.—Havre	7,425,440	9,668,634
Marseilles	4,378,892	3,168,673
Bordeaux	2,220,997	1,891,439
Dunkirk	5,740,931	6,507,516
Other Ports	8,724,771	7,013,444
Antwerp	....	....
Bremen	425,850	753,616
Norway and Sweden	....	62,374
Spain	11,768,757	10,527,128
Cuba	2,321,103	1,867,803
Other Ports	6,070,624	2,193,471
Total . . . . . Galls.	49,077,365	43,654,098

NAPHTHA.

	1884.	1883.
Great Britain	3,658,692	4,828,496
France	3,187,825	5,364,633
Germany	521,780	1,561,081
Other Europe	837,390	1,665,163
Various Ports	168,930	97,908
Total . . . . . Galls.	8,374,617	13,517,281

RESIDUUM.

	1884.	1883.
To all Ports	3,616,795	5,947,437

	GALLONS.
Total Refined since January 1, actual shipments	272,284,091
do do do do crude equivalent	363,045,455
do Crude do do actual shipments	49,369,529
Grand Total Crude and Crude equivalent . . . . galls.	412,414,984
Same time, 1883	463,614,411

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, November 8th, 1884:

PORTS.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	26	36	10	3	2	77
Philadelphia	39	19	18	1	3	80
Baltimore	13	0	0	0	0	13
Boston	0	2	0	0	0	2
Total Nov. 8	78	57	28	4	5	172
Total Oct. 4	115	55	27	5	4	206
Difference	37	2	1	1	1	34

On the 8th of November there were 34 less vessels loading and to load with petroleum and its products than on the 4th of October.

SUMMARY of the statement by the United Pipe Lines November 10, 1884:

Outstanding acceptances and certificates October 31	13,641.25
Credit balances	31,614.13
Total liabilities October 31	45,255.38
Gross stocks	45,255.38
Sediment and surplus	....
Receipts from all sources	....
Total deliveries	5,182.68

SEPTEMBER SUMMARY.

Acceptances and certificates, September 30	16,638.75
Credit balances September 30	33,799.31
Total liabilities September 30	50,438.06
Gross stocks	50,438.06
Sediment and surplus	....
Receipts from all sources	....
Net stocks delivered to National Transit Co September	1,160.17

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for October, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of October		1,536,662.62
Quantity of crude petroleum at close of Oct.	1,587,494.65	
Less sediment and surplus	77,267.35	
		1,510,227.30
Receipts during October		221,275.58
Deliveries during October—to refiners	244,936.82	
" " " —to other parties	....	
		244,936.82
Outstanding certificates, accepted orders, etc		813,000.00
Credit balances		697,227.30
Total liabilities October 31, 1884		1,510,227.30

SEPTEMBER SUMMARY.

		Barrels.
Quantity of crude petroleum in custody at beginning of September		1,527,443.84
Quantity of crude petroleum at close of Sept.	1,624,122.03	
Less sediment and surplus	87,459.41	
		1,536,662.62
Receipts during September		224,331.93
Deliveries during September—to refiners	212,777.14	
" " " —to other parties	.....	
		21[illegible],727.14
Outstanding certificates, accepted orders, etc		807,000.00
Credit balances		729,662.62
Total liabilities September 30, 1884		1,536,662.62

MESSRS. A. B. WALKER and G. T. Lowe of the Bradford Exchange, have formed a co-partnership for the transaction of the brokerage business. Customers of this firm can repose the strictest confidence in its integrity and reliability, and rest assured that their best interest will be carefully looked after.

RUNS, SHIPMENTS AND STOCKS.

RUNS OR RECEIPTS.

Pipe Line.	October 1884.	September, 1884
National Transit Co	1,719,366.93	1,741,566.79
Tidewater	221,275.58	224,331.93
Octave Oil Co	2,980.91	2,488.94
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	7,722.99	6,704.78
Cranberry Pipe Line	3,649.82	3,472.28
Total	1,954,996.23	1,978,564.72
Daily average	63,064.39	65,952.15

In the above runs only the oil received by the National Transit Co. directly from the wells, is included.

DELIVERIES OR SHIPMENTS.

Pipe Line.	October, 1884.	September, 1884.
National Transit Co	2,246,091.22	2,060,341.65
Tidewater	244,936.82	212,777.14
Octave Oil Co	2,321.84	2,589.24
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	13,826.59	11,930.14
Cranberry Pipe Line	2,761.76	4,102.56
Total	2,509,938.23	2,291,740.73
Daily average shipments	80,965.75	76,391.36

In the above shipments only the oil delivered to refiners is included.

Daily excess of shipments over runs, October, 1884	17,901.36
Daily excess of shipments over runs, September, 1884	10,439.21
Daily excess of runs over shipments August, 1884	2,593.82
Daily excess of runs over shipments, July, 1884	10,5 2.22
Daily excess of runs over shipments, June, 1884	6,443.56
Daily excess of runs over shipments, May, 1884	10,239.88
Daily excess of runs over shipments, April, 1884	11,020.89
Daily excess of runs over shipments, March, 1884	4,144.98
Daily excess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

Pipe Line.	October 31, 1884.	September 30, 1884.
National Transit Co	36,478,855.44	37,060,135.08
Tidewater	1,510,227.30	1,536,662.62
Octave Oil Co	5,503.83	4,367.53
Charley Run	3,717.00	3,717.00
Shaffer Run	30,636.32	30,636,32
Franklin (limited)	23 966.20	30,009.80
Cranberry Pipe Line	25,584.14	24,096.08
United Pipe Line	45,255.38	50,438.06
Total	38,123,745.61	38,740,722.49

Stocks decreased October, 1884	616,976.88
Stocks decreased September, 1884	345,281.52
Stocks increased August, 1884	97,692 86
Stocks increased July, 1884	323,063.10
Stocks increased June, 1884	190,320.23
Stocks increased May, 1884	322,981.75
Stocks increased April, 1884	1,945,919.83
Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	386,004.51

	Receipts.	Deliveries.
Daily Average October, 1884	63,064	80.966
Daily Average September, 1884	65,952	76,391
Daily Average August, 1884	66,996	64,402
Daily Average July, 1884	66,702	56,170
Daily Average June, 1884	67,350	60,907
Daily Average May, 1884	66,688	56,448
Daily Average April, 1884	65,794	54,773
Daily Average March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52,737
Daily Average February	65,208	44,352
Daily Average January	65,125	43 813

According to the gauges of the field men, Thorn Creek was producing 16,440 barrels on the 14th inst., 15,300 barrels on the 15th. The highest point reached in October was 12,500 barrels, which occured the day Armstrong No. 2 made its memorable debut.

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to November 1st, 1884.

1882.	Ch'y Gr've.	Cooper.	Balltown.	Total.	Daily Av'ge
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
April	31,191	126,860	71,989	230,040	7,668
May	30,010	107,514	70,069	207,593	6,696
June	25,348	89,554	67,508	182,410	6,080
July	16,206	76,762	76,601	169,569	5,470
August	20,615	63,415	67,883	151,913	4,900
September	19,590	64,648	63,453	147,691	4,923
October	13,824	56,151	55,211	125,186	4,038
Total Nov. 1, '84	3,340,565	2,052,585	1,507,561	6,900,711	7,542

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to Nov. 1st, 1884. Cherry Grove has produced 3,340,565 barrels, Cooper 2,052,585 and Balltown 1,507,561 barrels. The daily average runs from the three fields during Oct. were 4,038 barrels, a decrease of 885 barrels from the Sept. figures. The daily average runs from the old Cooper section during October were 959 barrels, and of the Henry's Mill pool 852; making a total of 1,811 barrels. The daily average of the Cooper district for September was 2,155 barrels, and for August 2,046 barrels. The Balltown field has a daily average of 1,781 barrels for October, against 2,115 in September, and 2,189 barrels in August. Cherry Grove averaged 446 barrels a day in October and 653 barrels in September.

BALDRIDGE AND WARDWELL

The two new white sand fields, Baldridge and Wardwell, are enumerated in the list. The pipe line runs from these sections since April 1st, have been as follows:

Month.	Baldridge Runs.	Daily Average.	Wardwell Runs.	Daily Average.
April	25,325	844	14,263	475
May	32,885	1,061	31,451	1.015
June	29,070	969	61,260	2,042
July	27,545	889	132,595	4,277
August	26,134	843	200,985	6,483
September	79,324	2,644	121,683	4,056
October	187,068	6,034	68,256	2,201

Stocks in the custody of the pipe lines were decreased 616,976 barrels during October.

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

PUBLISHED MONTHLY BY

McMULLEN & SNELL.

BRADFORD, PA.

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THE PRODUCING REGION.

ALLEGANY FIELD.

The three dry holes drilled during the past sixty days on lots 109 South Alma and 62 Willing cut off the chances for a Northeastern extension to the narrow streak which has been developed in South Alma. One of the foremost operators in this section has abandoned the field, at least for the time, and is devoting his energies to the running of a skating rink. The producer who has not signed the shut-down movement looks in vain for territory within or beyond the defines of the Allegany field which will pay drilling at ruling prices. Throughout the field nine wells were completed during October, having on the last day of the month a new production of 70 barrels. Of this number two came in dry. There were four new rigs up and building on lot 61 which had been standing for thirty days or longer and twelve wells drilling, making a total of 77, against an aggregate of 81 on the 1st of October. The pipe line runs during October show a marked decrease from the figures of September. The October average was 8,802 barrels, while the September numerals were 9,989 barrels. At this writing the stock report has not been compiled, but if there has not been an accumulation of stock the production has declined. The wildcat wells drilled west of Clarksville and in the northern part of Wirt came in dry. Oil region and local parties are drilling for gas in the vicinity of Binghampton, N. Y.

BRADFORD FIELD.

The October pipe line runs from the wells in the Bradford district decreased from those in September, indicating that the stopping of the drill is to result in a decline in production as soon as the work of cleaning out old wells is terminated by the winter's call. The pipe line runs from the wells during October averaged 31,500 barrels, a reduction of 1,949 barrels from the September average. At the Cole Creek front the starting of a well on lot 592 by T. J. Melvin has caused the drill to be set in motion at two other wells on adjoining lots. Bradford's crude waves are slowly but surely ebbing. The great basin of the Northern field has given up more than two-thirds of its store of crude. Eleven wells were completed during October with a new production of 134 barrels. The test well drilled on the Holland farm near the Allegheny river, below Eldred, came in dry. On the first of the present month there were six new rigs up and building, 59 which had been standing for thirty days or longer, and 10 wells drilling. In October 1880, 379 wells were finished, and on the last day of the month in that year there were 1001 rigs up and building and wells drilling.

WARREN AND FOREST.

The great middle field, consisting of the counties of Warren and Forest, and containing a greater number and variety of oil producing localities than any other division of the oil country, completed but thirty new wells in October, and seven of these were dry. The new production is estimated at 215 barrels. There were 11 new rigs up and building and 24 wells drilling on the first of November. In the Wardwell field but one well was drilling on the first of the month, and Balltown and Cooper are both quiet and inactive. Nothing at all is being done in the once rich producing streak that stretches from Lower Sheffield, through Henry's Mills to the Cooper Tract. Northeast of the Balltown field proper, a single well is drilling. It is located near the southwest corner of lot 741, in Cherry Grove township.

The ventures in the vicinity of Kinzua Village have not met with any measure of success. Fredericks & Co. on 5563 and Johnson & Co., on 5564, in Glade township, north of the Allegheny are both dry, and Hunter & Co.'s test on Warrant 5565, has doubtless encountered the same fate.

Nickel, Munn & Co. are drilling a test well southwest of Kinzua Village, near the northeastern part of lot 70, in Kinzua township. They are seeking a connecting link between the Dew Drop, or Kinzua Village development, and the Tiona field.

The Markham test in the northwest corner of lot 610, Cherry Grove township, was drilled through the sand last month, and proved a duster.

A. Wolf & Co. are drilling on lot 463, Mead

township, northwest of Stoneham, in the hope of finding a projecting spur from the southern extremity of the Wardwell pool.

Along the borders of the Clarendon field, a number of old wells have been drilled to the deeper sand that corresponds to the Cherry Grove formation, and many of them with good results. This lower sand usually contains considerable gas, if it is not rich in oil, and helps prolong the life of the flowing wells. None of the wells in this field are of large calibre, but the close, hard sand is capable of standing the largest torpedoes known in the oil business, and they sustain their average with great regularity.

LOWER COUNTRY.

The lower country occupies yet the same prominent position it did at the time of making the last report in the AGE. In the month of October it engrossed the entire attention of the trade, and the market was almost completely at the mercy of reports from Thorn Creek, except for one brief period, when the shorts became alarmed and put the market up in a way that knocked the wind out of the bears. October opened with a fairly active market and in favor of the bulls, but on the 11th, Christie Bros. No. 1, 367 feet west, and a little south, from the Phillips gusher, was drilled into the first pay streak and began flowing 16 barrels per hour, which was the signal for a five cent drop, the trade apparently thinking that this effectually neutralized the result of the Johnson Bros. No. 2 on the Henderson, which was opened to the public on the 8th and declared barren in the regular sand, though now producing 20 to 25 barrels of black oil from the "hundred foot sand." On Monday evening the 13th deeper drilling set the Christie to work at a greatly increased rate, the last gauge reported being 200 barrels per hour. The Sheidemantle, on the Moyer, was pronounced dry the same day, but did not excite much attention. The next morning the Christie was making 263 barrels on the first hour's gauge and was estimated to have made 300 barrels some hour during the night, putting it on the annals as the largest well ever struck in the United States. On the 18th Fisher Bros.' No. 10 on the Wallace tract was completed as a 225-barrel well and Connors & Fishell and Phillips' Bartley farm No. 3 made flows from the stray sand. The latter found one of the most open pebble rocks ever discovered in the oil regions, but did not prove a very large well, making only about 300 barrels in its best 24 hours, and a torpedo did not greatly improve it after it had fallen to four barrels per hour. The Connors developed a production of 60 barrels per hour from the first "pay streak," and on the 22d increased to 320 barrels in two hours, from the second rich streak.

On the 24th Armstrong No. 2 was reported dry by many, and the scouts concluded it could hardly be as large as 100 barrels per diem. The next day the well passed through the sand, with only the slightest showing of oil, and the record showed only one bit of good sand in the stratum. The owners gave it up as a very small affair, but resolved to shoot it heavy, as a forlorn hope. A fifty-quart shot was put in Monday forenoon, which acted slowly, but in the fullness of time showed that it had gone clear home. From eleven a. m. to four p. m. a solid column of golden oil poured from the depths of the earth to the crown pulley, six inches diameter at the casing head, a little lighter and a foot in diameter where it dashed itself into a million drops on the pulley block. The stream was estimated 100, 200 and 300 barrels per hour, and efforts were made to put obstructions in the way of the torrent as it rushed down the hill, and estimate the production from the time required for the overflow. The dams were torn away or overflowed so quickly that no data could be obtained, and the only successful contrivance was two boards placed parallel, and as the stream filled the space of a foot between and overflowed the boards, it was evident that not less than 400 barrels per hour would cover the production. The force of the flow was so great that it prevented the lowering of the tools, but when the oil saver was pressed in with levers, and the production turned into the tanks, a gauge showed 425 barrels for the first hour, and the first two hours wasted production was estimated at not less than 500 barrels. The output for 24 hours is variously estimated at from 8,000 to 10,000 barrels, surpassing the Christie by long odds and equalling, if not excelling, the great gushers of Russia.

Such are the wells which have attracted the attention of the world, and controlled the petroleum market. Wells in a territory so uncertain that no definite verdict can be rendered by expert fieldmen until the sand has been drilled through and torpedoed, yet a territory richer to the acre by considerable than even the favored spots of Cherry Grove, and the rich rocks of the best parts of McKean county. Gibson & Co., on the northwest division of the Armstrong & Semple reserve of the Marshall tract, is the

latest surprise in the field. Drilled through a good porous sand, with only slight showing of oil, it was torpedoed the 8th of the current month and started at 70 barrels per hour. It is only about 400 feet northeast of the Johnson failure, which was never shot, and the result may encourage Johnson to try a torpedo. As yet there is no clue to the shape or extent of the gusher territory, though there likely will be before this reaches the readers of the AGE. The most reasonable theory yet advanced is that of a narrow belt extending east and west, or running slightly to the south of east.

The St. Joe district has developed another very fair producer under the auspices of the Phillips Bros., in advance to the west, clearly showing a further extension of the narrow belt, though the fact that the sand grows thinner again in that direction indicates the speedy termination of this remarkable streak. Other parts of the lower country have been and are quiet and uneventful, except for the striking of a well on Dr. Shamburg's tract in eastern Venango county, which started at 65 barrels a day. A fairly large number of wildcat locations have been made in the country, south and southwest from the gushers on Thorn Creek, and something may be heard from them later.

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	SEPTEMBER, 1884. Wells.	Prod'n.	Dry.	OCTOBER, 1884. Wells.	Prod'n.	Dry.
Scio	1	8	0	1	10	0
Alma	2	20	0	3	10	2
Wirt	0	0	0	0	0	0
Bolivar	2	15	0	4	40	0
Clarksville	1	5	0	0	0	0
Genesee	1	10	0	1	10	0
Miscellaneous	0	0	0	0	0	0
Total	7	58	0	9	70	2

BRADFORD FIELD.

Division of Field.	SEPTEMBER. Wells.	Prod'n.	Dry.	OCTOBER. Wells.	Prod'n.	Dry.
E. & W. Branches	3	22	0	5	46	0
Kendall Creek	1	8	0	1	8	0
Foster Brook	0	0	0	1	10	0
Four Mile	3	26	0	2	20	0
Indian&Meeks Cr'ks	2	15	0	1	0	1
Cole Creek	1	100	0	1	50	0
Kinzua	1	0	1	0	0	0
Total	11	171	1	11	134	1

WARREN AND FOREST.

District.	SEPTEMBER. Wells.	Prod'n.	Dry.	OCTOBER. Wells.	Prod'n.	Dry.
Glade	29	653	6	14	134	4
Clarendon	6	37	0	7	37	1
Tiona	6	36	0	6	39	0
Cooper	2	0	2	1	5	0
Balltown	3	75	0	0	0	0
Miscellaneous	2	0	2	2	0	2
Total	48	801	10	30	215	7

LOWER COUNTRY.

District.	SEPTEMBER. Wells.	Prod'n.	Dry.	OCTOBER. Wells.	Prod'n.	Dry.
Venango	13	107	1	11	132	1
Clarion	0	0	0	1	0	1
Butler and Armstrong	11	2373	3	17	9500	4
Total	24	2480	4	29	9632	6

GRAND SUMMARY.

District.	SEPTEMBER. Wells.	Prod'n.	Dry.	OCTOBER. Wells.	Prod'n.	Dry.
Allegany	7	58	0	9	70	2
Bradford	11	171	1	11	134	1
Warren and Forest	48	801	10	30	215	7
Lower Field	24	2480	4	29	9632	6
September Total	90	3510	15	79	10051	16
Oct. Total	78	10051	16			
Difference	12	6541	1			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	OCT. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.
Scio	1	11	2	14	1	12	1	14
Alma	2	12	3	17	1	12	2	15
Wirt	2	5	1	8	1	5	2	8
Bolivar	1	15	3	19	0	12	4	16
Clarksville	0	3	1	4	1	3	2	6
Genesee	0	16	1	17	0	16	0	16
Miscellaneous	0	1	1	2	0	1	1	2
Total	6	63	12	81	4	61	12	77

BRADFORD FIELD.

Division of Field.	OCT. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.
E. & W. Branches	1	16	4	21	2	17	1	20
Kendall Creek	0	9	1	10	0	9	1	10
Foster Brook	0	6	0	6	2	6	1	9
Four Mile	1	11	2	14	1	10	3	14
Indian Creek	1	10	0	11	0	9	1	10
Cole Creek	1	4	1	6	1	5	3	9
Kinzua	0	3	0	3	0	3	0	3
Miscellaneous	0	0	0	0	0	0	0	0
Total	4	59	8	71	6	59	10	75

WARREN AND FOREST.

Division of Field.	OCT. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.
Glade	7	7	13	27	6	6	6	18
Clarendon	3	14	5	22	3	11	4	18
Tiona	5	9	3	17	0	8	6	14
Cooper	0	1	1	2	0	1	0	1
Balltown	2	7	0	9	1	8	1	10
Miscellaneous	3	2	3	8	1	2	7	10
Total	20	40	25	85	11	36	24	71

LOWER COUNTRY.

Division of Field.	OCT. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.
Venango	4	4	8	16	5	4	9	18
Clarion	0	1	2	3	0	1	2	3
Butler & Armstrong	18	6	33	57	6	7	44	57
Total	22	11	43	76	11	12	55	78

GRAND SUMMARY.

Field.	OCT. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs.	Old Rigs.	Drilling.	Total.
Allegany	6	63	12	81	4	61	12	77
Bradford	4	59	8	71	6	59	10	75
Warren & Forest	20	40	25	85	11	36	24	71
Lower Country	22	11	43	76	11	12	55	78
Total Oct. 1	52	173	88	313	32	168	101	301
Total Nov. 1	32	168	101	301				
Difference	20	5	13	12				

GREENLEE & Co.'s well on the Armstrong lease, Thorn Creek, was ushered in on the 14th inst. Unlike most wells in this section, the salt water was small in amount. The first hour ending at 1 p. m. the well made 65 barrels, the second hour 126 and the third 170 barrels. The following morning it was doing 100 barrels per hour.

OCTOBER OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN OCTOBER, 1884.

Allegany Field.

Lot.	Owner.	Barrels.
Scio, lot 11,	Thompson & Vesey, No 4	10
Alma, lot 38,	Perrin & Young, No 1	10
do lot 109,	Shirley & Hostetter	dry
Willing, lot 62,	O'Connor & Co	dry
Bolivar, lot 8,	Jordan Oil Co	10
do lot 23,	F C Streeter & Co, No 4	10
do lot 23,	Irvin & Morgan, No 4	10
do lot 31,	Hydrick & Co No 6	10
Genesee, lot 14,	C. W. Scofield	10

Wells 9
Production 70
Dry 2

Bradford Field.

E & W Branches,	Bingham, lot 186, R J Straight No 3	10
do	Crooker, Jennings & Curtis No 10	10
do	Buchannan, Snyder & Co est	10
Quintuple, lot 174,	D Atwater & Co	10
do lot 179,	Booth Bros	6
Kendall Creek,	Dodge, Dodge & Carter	8
Foster Brook,	C B & H, Frank Williams	10
Four Mile,	Widow Carroll, Thos Kervin No 10	10
do	Stevens, Stevens	10
Indian Creek,	Holland, White & Co	dry
Cole Creek,	Bingham, John McKeown	50

Wells 11
Production 134
Dry 1

Warren and Forest.

Glade and other Towns.

North Warren,	Koebelin, Morck & Co	dry
do	Lesler, J A Best & Co	dry
do	Siggins, B V Siggins & Co	5
do	J. Fletcher, Lacy, Herzell & Co	dry
2428,	Kinzua, Moore & Co	3
5563,	Glade, Fredericks & Co	dry
Sweating,	J A Magee No 3	6
Rogers,	Barnsdall Bros No 10	20
do	do No 11	20
do	do No 12	20
do	do No 13	20
do	Reid & Brenneman No 5	10
Lot 451,	Otis F Hoffman No 3	15
Lot 461,	do No 4	15

Wells 14
Production 134
Dry 4

Clarendon.

466, J Smith & Son No 6	5
107, Fay & Lawton No 17	6
526, F G Keatley No 8	8
526, Emerson & Co No 2	4
529, J. C. Goal No 3	6
582, H G Lapham No 7	8
610, Steve Markham & Co	dry

Wells 7
Production 37
Dry 1

Tiona.

108, Hackett & Shirley No 6	8
164, Hill & Powell No 4	6
165, Wm Pagett, No 17	8
204, Wheeler, Bovaird & Seyfang No 3	6
204, Emerson & Farnsworth No 6	6
205, Sage, Kelly & Ross	5

Wells 6
Production 39

Cooper District.

Lot 395, Horton, Crary & Co No 2	5

Wells 1
Production 5

Miscellaneous.

Elk Co, Grant's Mills, O'Connor Bros	dry
Warren, 5223, Vandergrift	dry

Wells 2
Production 0
Dry 2

Lower Country.

Venango.

Diamond, W H Loots	6
do Manning & Darr	10
McCalmont, S P McCalmont	25
Galbreath, Cramer & Co	15
Blood, Wrattan	10
do P Bankson	15
Shamburg, Dr Shamburg	35

Vicinity Emlenton.

McCullough, Messner & Co	7
Black, Weible & Boyce	6
Calvert, Jas T. Young	3
McMichael, Emlenton Gas Co	dry

Wells 11
Production 132
Dry 1

Clarion.

Clarion, Clarion Gas Co	dry

Wells 1
Dry 1

Butler and Armstrong.

Kelly, Kelly & Co	10
Pontius, Hunter & Cummings	15
Zang, Dennison & Co	60
Martin, C Widger	15
Clouse, Phillips Bros	50
Mulligan, Hite & Co	50
Kirkpatrick, Baldridge Oil Co	dry

Baldridge.

Wallace, Fisher Bros No 10	75
do do No 11	750
Marshall, Armstrong, Boyd & Semple No 2	5000
do Connors & Fishell No 1	1650
Bartley, Phillips Bros No 2	800
do do No 3	75
do Christie Bros No 1	950
Hardman, Johnson Bros No 2	dry
do McBride & Co	dry
Moyer, A Shidemantle	dry

Wells 17
Production 9500
Dry 4

DRILLING WELLS, RIGS UP AND BUILDING NOV. 1.

Allegany Field.

Scio.

Lot.	Owner.	Depth.
2,	Coast Oil Co No 31 (old)	rig
2,	Pennell Bros No 4	500
3,	Coyle (old)	rig
4,	Jas McEnroe No 4 (old)	rig
4,	Breckenridge (old)	rig
11,	Thompson & Vesey No 5	rig bldg
11,	Lowcomer & Turner (old)	rig
12,	Allen & Morse (old)	rig
12,	Griffin & Co No 7 (old)	rig
12,	do No 10 (old)	rig
50,	The Union Oil Co No 8 (old)	rig
50,	do do No 9 (old)	rig
L Morton farm,	A J Applebee No 3 (old)	rig
1,	Pickering & Smith (foundation laid) (old)	rig b'dg

New rigs 1
Old rigs 12
Drilling 1
Total 14

Alma.

1,	Phillips Bros No 14 (shut down) (old)	300
1,	do No 15 (old)	rig
23,	Vance & Horton (old)	3 rigs
24,	New Milford Oil Co old)	2 rigs
24,	W F Jones (old)	rig
24,	Sutherland & Co No 5 (old)	rig
38,	Perrin & Young No 15	500
51,	Sawyer & Co (old)	rig
55,	W P Decker	rig
66,	Thos Pooler	500
66,	do	rig bldg
88,	Duke & Co (old)	rig
142,	Dean & Smith No 5 (old)	rig

New rigs 1
Old rigs 12
Wells drilling 2
Total 15

Wirt.

14,	Lester & Co. (old)	rig
30,	John Moran	sand
33,	Miner, Wellman & Fuller (old)	rig
43,	(Wilcox farm) Allegany Gas Co (old)	rig
61,	Muldoon Oil Co (old)	rig
1,	George McCoy No 3 (old)	rig
Wheeler,	McKenzie & Co	rig
Straight,	Nat Transit Co	drilling

New rigs 1
Old rigs 5
Wells drilling 2
Total 8

Bolivar.

7,	W & J Duke No 16 (old)	rig
7,	Coast Oil Co No 20 (old)	rig
7,	do No 42 (old)	rig
7,	do No 45 (old)	rig
15.	Fay (old)	rig
15,	Kelly & McMurray	drilling
15,	Sawyer & Co (old)	rig
15,	John Benninger (old)	900
23,	F C Streeter & Co No 7	rig
23,	Irvin & Morgan No 5 (old)	rig
30,	Fritz & Lowry No 8 (old)	rig
30,	do do No 10 (old)	rig
31.	Smith & Co No 10 (old)	rig
Wetherby,	Empire Gas Co	500
do	do (old)	rig
42,	Parker	100

New rigs 0
Old rigs 12
Drilling 4
Total 16

Clarksville.

9,	Heuston & Brecht No 4 (old)	rig
9,	Merritt (old)	rig
12,	Cuba Gas Co (old)	rig
Gesman,	Faught & Co	sand
do	Wasson & Madison	rig
do	Werthman & Fletcher	drilling

New rigs 1
Old rigs 3
Wells drilling 2
Total 6

Genesee.

8,	I Willets (to the top of sand	drilling
8,	do (to the top of sand)	drilling
14,	Merwin (old)	rig
21.	Empire Gas Co No 3 (old)	rig
22,	I Willets No 13 (old)	rig
22,	do No 14 (old)	rig
22,	do No 15 (old)	rig
22,	do (old)	rig
23,	Hughes & Coughlin (old)	rig
23,	Emery Oil Co No 16 (old)	rig
23,	do do No 17 (old)	rig
Champlain,	Emery Oil Co No 8 (old)	rig
29,	William Cranston (old)	rig
31,	H L McMullan & Co (old)	rig
38,	S E Young (old)	rig
38,	Empire Gas Co (old)	rig

New rigs 0
Old rigs and wells shut down . 16
Drilling 0
Total. 16

Miscellaneous.

Towanda, C M Carroll & Co	1000
Gains, Peck & Tait (old)	rig

New rigs 0
Old rigs 1
Wells drilling 1
Total 2

Bradford Field.

East and West Branches.

Paton, McClure & Co (old)	rig
Clark, McCray Bros (old)	rig
Willis, do No 29 (shut down)	550
Glass, Barnsdall Bros (old)	rig
Dent, P C L & P Co No 64 (old)	rig
do do do No 65 (old)	rig
do Whitney & Wheeler No 40 (old)	rig
Mill lot, Whitney & Wheeler No 9 (old)	rig
Paul, Bayne, Fuller & Melvin No 5 (old)	rig
Wilson, West Branch Oil Co No 11 (old)	rig
Sugar Run, W H D Chapin (old)	rig
Cary, Duncan No 4 (old)	rig
Mack, Fisher Brothers No 19 (old)	rig
Bowen lands, Phillips & Co	rig
Hinchey, McMurray Bros & Co No 5	400
Prain, Brinton & Dale (old)	rig bldg

Quintuple.

25, E Strong & Co (old)	rig
44, J W Humphrey (old)	rig
138, Campbell & Yonkins	rig
220, Clark, Stearns & Co (old)	rig

New rigs 2
Old rigs and shut down 17
Drilling 1
Total 20

Kendall Creek.

Melvin, P C L & P Co No 85 (old)	rig
do do do No 86 (old)	rig
do do do No 87 (old)	rig
Borden, Urquhart & Lavens (old)	rig
Norton, Dan Clark No 3 (old)	rig
do do do No 4 (old)	rig
Irons, Carter (old)	rig
Dodge, Dodge & Carter (old)	rig

Willets, I Willets (old) . . . . . rig
Bingham, Mina Oil Co No 9 800

New rigs 0
Old rigs 9
Drilling 1
Total 10

Foster Brook.

E T Co, Boyne, Penny & Coleman No 11 (old) rig
do F L Blackmarr & Post No 5(old) rig
do R W Evans (old) . . . . . rig
C B & H, Watson Oil Co No 33 (old) . rig
do do do No 34 (old) . rig
do Juter & Yager (old) . . . . . rig
do P W Bulger, ... rig bldg
Vandergrift purchase, Letson . . . . drilling

New rigs 2
Old rigs 6
Well drilling 1
Total 9

Four Mile.

Van Campen Wm M Brown (old) . . . rig
do Brown & Harriett . . . drilling
do Merrill & Perrin (old) . . rig
do Geo Van Campen & Sons No 21 (old) . . . . . rig
do Geo Van Campen & Sons No 22 (old) . . . . . rig
do Cleveland Oil Co No 5 (old) rig
do do do No 6 (old) rig
do Wm Doe No 5 (old) . . rig
Waters, Griffin & Howard No 2 (old) . rig
C B & H, James Smith (old) . . . . . rig
Widow Carrol, Malloch & Griswold (old) . . rig
Stevens, Burns Bros 100
do Burns Bros . . . . . rig
Buzzard, Waco Oil Co 700

New rigs 1
Old rigs 10
Drilling 3
Total 14

Indian Creek.

Barse. Union Oil Co No 36 (old) . . . . rig
North Branch, J D Downing & Co (old) 2 rigs
Keating, Forest Oil Co No 47 (old) . . rig
Hamlin, Miller & Odell No 4 (old) . . rig
Zimmer, Shear Bros (old) . . . . . 2 rigs
Morse, Morse & Brown (old) . . . . . rig
Miles Loop, Union Oil Co No 25 (old) rig
Keyes, Dan'l Keyes . . . . . drilling

New rigs 0
Old rigs 9
Drilling 1
Total 10

Cole Creek.

Rew, Capt E Frawley (old) . . . . . rig
Bingham, lot 536 Union Oil Co (old) . . rig
do lot 550 do (old) . . rig
do lot 495 Union Oil Co No 3 (old) . . . . . rig
566, John McKeown (old) . . . . . rig
582, do 400
582, do . . . . . rig
593, T J Melvin No 1 400
592, Union Oil Co No 10 400

New rigs 1
Old rigs 5
Drilling 3
Total 9

Kinzua.

Bingham, Union Oil Co No 56 (old) . . rig
do Emery Oil Co No 40 (old) . . rig

Kinzua Village.

U O Co, Dr E A Van Scoy (old) . . . rig

New rigs 0
Old rigs 3
Drilling 0
Total 3

Warren and Forest.

Glade and Other Towns.

North Warren, McKinney, Sargent & Copeland . . rig bldg
do Rhumor, Rhumor & Co rig
Fuller farm, Kinzua, Jas Parker & Co.. (old) . . rig
Pratt lot, Kinzua village, Rock Oil Co . . . . drilling
5564, (Glade) Johnson & Co . . . . . sand
5565, (Glade) Hunter & Sherman . . . sand
5542, (Elk twp) Schnur & Robbins (old) rig
Reighe, S M Cogswell & Co . . . . . sand
Clark, do No 1 . . rig
Lacy, W H Bradley No 3 200

Cobham, Union Oil Co No 13 (old) . . rig
Foster, Wesley Chambers No 1 (old) . rig
Kirwin, Clark & Foster (old) . . . . . rig
Copeland, Wm Pagett & Co (old) . . . rig
Rogers, Barnsdall Brothers No 14 . . . rig
do do No 15 . . . rig
do do No 16 . . . rig
do Wesley Chambers No 2 . . . . drilling

New rigs 6
Old rigs 6
Drilling 6
Total 18

Clarendon.

463, A Wolf & Co 800
35, (Mooney farm) Bell No 2 . . . . drilling
54, D Beatty & Son No 36 (old) . . . rig
78. do do (old) . . . . . 2 rigs
466, Stoneham Oil Co No 3 (old) . . . rig
466, D Riddlesperger (old) . . . . . rig
464, Columbia Oil Co No 17 (old) . . rig
106, Golden & Co (old) . . . . . rig
108, C H Filkins (old) . . . . . rig
495, W W Ballard No 4 (old) . . . . . rig
526, Emerson & Co No 3 100
527, Goal Bros No 2 . . . . . rig
527, do No 3 . . . . . rig
527, do No 4 . . . . . rig
561, F H Rockwell & Co No 13 (old) . rig
583, do do do No 14 (old) . rig
668, Holman (fishing) 1000

New rigs 3
Old rigs 11
Drilling 4
Total 18

Tiona.

70, Nickel. Munn & Co . . . . . drilling
75, Fertig & Henne (shut down) . . . sand
59, do (shut down) . . . sand
104, Armor & Co No 3 . . . . . drilling
109 J S Patterson No 31 (old) . . . . . rig
109, Schonblom & Townsend No 8 (old) rig
110, Fertig & Henne (old) . . . . . 2 rigs
109, J R Kuhn & Co 800
109, Allen, O'Donnell & Co 300
161, Helm & Mealey (old) . . . . . rig
165, C H Coffin & Co No 2 (old) . . . . rig
204, Wheeler, Bovaird & Seyfang No 5 sand
241, Winger . . . . . drilling

New rigs 0
Old rigs and shut down 8
Drilling 6
Total 14

Cooper District.

Lot 438, Shank & Emery No 23 (old) . . rig

New rigs 0
Old rigs 1
Drilling 0
Total 1

Balltown.

Lot 741, Cherry Grove, L Kreear . . . drilling
3194, Porcupine Oil Co No 21 (old) . . rig
3195, Emery, Agnew & Co No 6 (old) . . rig
3195, do do No 7 (old) . rig
4821, Balltown Oil Co No 24 (old) . . . rig
4792, Howe Oil Co No 16 (old) . . . . rig
4792, do do No 17 (old) . . . . rig
5236, May, Kelly & Grandin No 28 (shut down) sand
5236, do do No 29(old) rig
3195, McMullen & Co . . . . . rig

New rigs 1
Old rigs 8
Drilling 1
Total 10

Miscellaneous.

Elk Co, 3662, McDermott 500
Forest, ——, Murphy, Hughes & Co . 500
do West Hickory, Wolcott & Co . drilling
Forest 3164, J M Arters (shut down) near sand
Warren 5229, Homer & Campbell . . rig
do Deerfield twp, (Conklin Run) W W Hague . . drilling
do Spring Creek twp, lot 316, Windsor & Co (shut down) . 1000
do Pleasant twp, lot 486, Campbell & Co . . . drilling
Youngsville, one mile north Matthew's Run, Branch & Co . . drilling
Conewango twp, (Murphy farm) Brown & Co . . . . drilling

New rigs 1
Old rigs and shut down 2
Drilling 7
Total 10

Lower Country

Venango.

Diamond, Manning & Darr . . . . . rig
Kaufman, A P Dale (old) . . . . . rig
Flinchpaugh, A P Dale . . . . . drilling
McCalmont, S P McCalmont No 4 . . 700
do do No 5 . . rig
do do No 6 . . rig
do do No 7 . . rig
Galbreath, Cramer & Co. . . . . drilling

Vicinity Emlenton.

McCullough, W J Weaver No 3 . . . . drilling
A M Crawford, Sherry & Knight . . . sand
Jew tract, Jamison & Flower No 2 . . 800
D M Crawford, Daniels & Co No 3 . . 750
Black, Galbraith & Sherwood 800
Smith, Weible & Boyce (old) . . . . . rig
Robinson, Gorman & Co . . . . . rig
Rowley, Rowley & Taylor . . . . . drilling
Richey, E Crawford & Sons (old) . . rig
Goodrich, E Goodrich (old) . . . . . rig

New Rigs 5
Old Rigs 4
Wells drilling 9
Total 18

Clarion.

Troutner, Unknown (old) . . . . . rig
Lobaugh, Klingensmith (Callensburg) 950
Loll, Jacob Hahn (Tylersburg) . . . . sand

New rigs 0
Old rigs 1
Wells drilling 2
Total 3

Butler and Armstrong.

Kelly, Edmonds & Co (old) . . . . . rig
Reep, Westerman & Co 900
Kesselman, Reep & Sutton No 3 . . . sand
do do No 4 . . . 500
Mulligan, H McGuire & Co, No 5 . . 900
do Showalter & Hartman . . . 1200
Witt, do do . sand
Kitzert, do do No 3 950
F Coch, Wm Reed (old) . . . . . rig
C Hinchberger do (old) . . . . . rig
F Shaffner, do (old) . . . . . rig
M Brown, do (old) . . . . . rig
Bakersville, Pittsburgh Oil Co . . . . . sand
Gormaly, Gilbert & Vanderlin Murrinsville . . 1200
do do (old) . . rig

Baldridge.

Wallace, Fisher Bros No 9 (fishing) . . 1200
do do No 12 1400
do do No 13 (old) . . rig
do do No 14 1200
Marshall do No 1 (crooked hole) 700
do do No 2 . . . . sand
do do No 3 . . . . . sand
do do No 6 1100
do do No 8 600
do Armstrong, Boyd & Semple No 3 drilling
do do do No 4 rig bldg
do Connors & Fishell No 2 . . . 600
do Gibson & Co No 1 . . . . . sand
do do No 2 500
do Greenlee & Co 700
Bartley, Christie Bros No 2 1450
do do No 3 150
do do No 4 900
do do No 5 . . . . . drilling
do do No 6 . . . . . drilling
do Phillips Bros No 4 . . . . . sand
do do No 5 1000
do do No 6 500
do do No 7 . . . . . drilling
do do No 8 . . . . . rig
Kennedy, Phillips Bros & Simpson . . 900
Doods, Phillips Bros No 2 1300
do do No 2 . . . . . drilling
do do No 3 . . . . . rig
McCandless do No 2 800
Patterson, do No 1 900
Henderson, McMullen & Co 1000
Scully, McBride & Campbell 950
Brown, Bruce, Reep & Sutton (shut down) 1250
do McTammany & Co 1200
Weber, P Schmick. . . . . sand
Douthett, Straight Run Oil Co 700
McCormack, Phillips Bros 500
Kennedy, Babbitt & Co . . . . . drilling
R. Fisher, Baldridge Oil Co . . . . . rig
Ribalds, Unknown . . . . . 2 rigs

New Rigs 6
Old Rigs 7
Wells drilling 44
Total 57

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, AUGUST, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., O TOBER 9, 1884.

CUSTOMS DISTRICTS.	MINERAL CRUDE.		NAPHTHAS		ILLUMINATING.		LUBRICATING AND PARAFFINE OIL.		RESIDUUM.		TOTAL.	
	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars	Gallons.	Dollars.
Boston & Charlestown, Mass.	. . . . .	. . .	160	44	1,390.572	125,744	12,023	2,679	. . . . .	. . . .	1,402,755	128,467
New York, N. Y.	6,463,173	482,482	1,154,912	95,428	23,602,816	2,133,833	956,944	220,134	294,084	19,071	32,471,929	2,950,948
Philadelphia, Pa.	1,481,700	97,185	438,995	33,944	9,944,824	832,198	39,840	6,280	. . . . .	. . . .	11,905,359	969,607
Baltimore. Md.	. . . . .	. . . .	. . . . .	. . . .	375,300	28,337	. . . .	. . . .	161,868	7,131	537,168	35,468
San Francisco, Cal.	. . . . .	. . . .	11,730	3,860	16,870	4,461	1,064	705	. . . . .	. . . .	29,664	9,026
All other districts.	. . . . .	. . . .	3,359	454	146,038	19,545	1.857	335	. . . . .	. . . .	151,245	20,334
Total for Aug. 1884	7,944,873	579,667	1,609,147	133.730	35,476,420	3,144,118	1,011,728	230,133	455,952	26,202	40,498,120	4,113,850
Total for Aug. 1883	5,503,453	404,804	1,778,637	124,244	41,600,932	3,580,388	528.063	110,211	169,722	9,545	49,580,807	4,229,192
Total for 8 months, ended Aug 31, 1884	44,940,850	3 571,954	6,528,013	552,739	264,449,357	24,675,817	7,586,633	1 570,779	3,586,464	235,339	327,091,317	30,606,628
Total for 8 months, ended Aug 31, 1883	33,840,105	2 497,135	9,919,232	717,419	290,263,062	25,924,428	6,600,028	1 456,150	4,268,880	322,500	344,892,207	30,917,632

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, SEPTEMBER, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., NOVEMBER 6, 1884.

CUSTOMS DISTRICT.	MINERAL CRUDE.		NAPHTHAS.		ILLUMINATING.		LUBRICATING AND PARAFFINE OIL.		RESIDUUM.		TOTAL.	
	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars.	Gallons.	Dollars	Gallons.	Dollars.	Gallons.	Doll rs.
Boston & Charlestown, Mass	. . . . .	. . . .	. . . . .	. . . .	913.397	85,903	22,940	4,734	. . . . .	. . . .	936,337	90,637
New York, N. Y.,	5,973,38	449,868	1,606,470	137,659	29,790,841	2,640,188	1,003,206	193,277	139,650	9.883	38,513.552	3,430,875
Philadelphi , Pa.,	1,563,907	128,095	427,992	31,781	12,719,564	1,002,349	53,250	7,850	. . . . .	. . . .	14,764,713	1,170,075
Baltimore, Md.,	. . . . .	. . . .	. . . . .	. . . .	2,821,792	223,137	35,934	7,623	. . . . .	. . . .	2,857,726	230,760
San Francisco, Cal.,	. . . . .	. . . .	1,850	370	20,400	3,910	917	606	. . . . .	. . . .	23,167	4,886
Al other districts	. . . . .	. . . .	6,460	789	251,315	29,425	15,764	3.898	. . . . .	. . . .	273,539	34,112
Total for Sept., 1884	7,537,292	577,963	2,042,772	170.599	46,517,309	3,984,912	1,132,0	217,988	139,650	9,883	57,369,034	4,961,345
Total for Sept., 1883	6,730,906	522,469	1,619,771	100,470	45,241,595	3,919,476	803,53	170,238	989 226	60,837	55,385,030	4,773,490
Total for 9 mon hs ended Sept. 30, 1884	52,478,142	4 149,917	8,570,785	723,338	310,966,666	28,660,729	8,718,644	1 788,767	3,726,114	245,222	384,460,351	35,567,973
Total for 9 months ended Sept. 30, 1883	40,571,011	3 019,604	11,539,003	817,889	335,504,657	29,843,904	7,404.460	1 626,388	5,258,106	383,337	400,277,237	35,691,122

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	Oct. 25. 1884. Barrels.	Sept. 27, 1884. Barrels.
London	232,611	264,276
Trieste	65,585	76,831
Seven Continental Ports	1,770,157	1,826,619
Total Stocks afloat and ashore	2,068,353	2,167,726
Decrease in Stocks since September 27	99,373	

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS OCTOBER 25, 1884.

	Stocks W'k end'g Oct. 25.		Stocks Afloat W'k end'g Oct. 25.		Unloading W'k end'g Oct. 25.		Grand Total Stocks Afloat & Unloading.		Receipts. From July 1.		Shipments From July 1.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	402,918	175,113	44,710	57,498	196,000	. . .	466,628	232,611	199,030	125,823	169,471	180,883
Trieste	6,381	44,848	37,053	20,737	21,000	. . .	64.434	65,585	58,346	45,417	71,090	44.574
Bremen	867,728	675,675	56,992	35,474	90,000	91,000	1,014,720	802,149	246,370	201,006	273,269	321,912
Hamburg	207,661	234,235	84,433	73,752	29,500	60,500	321,594	368,487	303,938	475,602	429,384	413,912
Antwerp	299,872	97,413	57,331	133,851	68,600	60,300	425,803	291,564	379,053	312,979	289,559	341,536
Rotterdam	61,631	43,284	28,757	13,253	9,000	34,000	99,388	90,537	56,409	60,485	69,914	79,573
Amsterdam	40,658	19,030	13,867	42,496	15,000	7,000	69,525	68,526	95,485	55,704	91,665	79,684
Stettin	83,899	90,851	25,153	27,561	. . .	. . .	109,052	118,412	126,431	159,800	110,903	110,567
Danzig	11,704	26,049	3,445	4,433	. . .	. . .	15,149	30,482	29,352	44,374	29,333	26,784
Total	1,573,153	1,186,537	269,978	330,820	212,100	252,800	2,055,231	1,770,157	1,237,038	1,309,950	1,294,027	1,373,968

	1881.	1882.	1883.	1884.
Total stocks exclusive Trieste	952,450	1,737,384	1,976,071	1,501,050
Total afloat, exclusive Trieste	486,954	301,527	314,688	388,318
Total unloading, exclusive Danzig, London and Trieste	399,800	215,900	231.100	252,800
Total	1,839,204	2,254,811	2,521,859	2,002,768
Afloat and unloading for direct Continental Ports	. . . .	50,900	39,300	11,700
" " " Baltic Sea, exclusive Stettin and Danzig	8,000	1,400	4,700	26,500
" " " English harbors, exclusive London	22,100	131,000	156,700	180,700
Grand Total	1,869,304	2,438,111	2,722,559	2,221,668

RUSSIAN OIL IN SCOTLAND.

A Glasgaw correspondent of the *Oil and Colourman's Journal*, writing under date of October 30, says: "The first direct shipment of Russian oil to Glasgow was landed this week from Moscow, consigned to a local trader, with the view of competing with American heavy mineral lubricating oils. I have seen the samples of the qualities included in the parcel, which compare favorably with the American oil although not quite so pale in color, but the lubricating qualities may possibly surpass those of its trans-atlantic rival. The odor is hardly so sweet as is desirable, but the chief obstacle will be the excessive cost incurred in bringing it such a distance. I fear that it may not be such a formidable rival on that account, more especially as the price expected by the consigners is considerably above what can be realized."

CRUDE QUOTATIONS FOR OCTOBER, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Bradford. Highest.	Bradford. Lowest.	Bradford. Closed.	Oil City. Opened.	Oil City. Highest.	Oil City. Lowest.	Oil City. Closed.	New York. Opened.	New York. Highest.	New York. Lowest.	New York. Closed.	Pittsburgh. Opened.	Pittsburgh. Highest.	Pittsburgh. Lowest.	Pittsburgh. Closed.
W	1	74¼	74⅜	72½	73	73½	74½	72⅝	73⅛	73⅝	74¼	72½	73¼	74½	74½	72⅝	73¼
T	2	73¾	74⅜	72¾	74¼	73⅞	74⅛	72¾	74⅛	73⅞	74¼	72¾	74	73	74¾	72⅞	74¼
F	3	74¼	74½	72⅞	74⅛	74⅝	74⅞	72⅞	74	74¼	74½	72¾	74¼	73½	74½	72¾	74⅛
S	4	74¼	75	73	74¾	74⅜	75	73	74⅝	74¼	74¾	73	74½	74	74¾	73	74⅜
M	6	74⅞	75½	74	74⅛	75	75½	74	74⅜	75	75¼	74⅛	74⅛	74½	75⅜	74¼	74⅜
T	7	74½	75⅛	73¾	74⅝	73¾	75¼	73⅝	74¾	74⅛	75⅛	73¾	74¾	74½	75⅛	73⅝	74⅝
W	8	75⅛	75¼	73⅝	73¾	75	75¼	73⅝	73¾	75	75⅛	73¾	73¾	75⅜	75⅜	73¾	74
T	9	73¾	73⅞	72½	72¾	74	74	72½	72¾	73¾	73⅞	72⅝	72⅞	74	74⅛	72½	72¾
F	10	73	73⅝	72⅝	73	73	73⅝	72¾	73	72¾	73⅝	72⅝	73	73	73⅝	72¾	73¼
S	11	73½	73⅞	69¼	70¼	73⅝	74	68¾	70⅝	73⅝	73⅞	69	70¼	73½	73⅞	69	70⅜
M	13	69¾	69¾	67¼	68½	70	70	67⅜	68⅞	69½	69½	67½	68	69½	69⅝	67⅜	68⅞
T	14	65½	65½	61⅜	62⅞	67	67	61½	62⅞	66½	66½	61½	62⅝	66	66	61½	62¾
W	15	62	62¾	61½	62⅛	63¼	63¼	61⅝	62	63	63	61½	62⅛	62	62⅛	61½	62¼
T	16	63½	64⅜	62¾	63¾	62⅞	64¼	62⅝	63⅞	62¾	64½	62¾	63⅞	63	64⅛	62½	63¾
F	17	64⅜	64⅜	61⅛	62½	64	64½	61⅛	62⅛	64¾	64¾	61⅜	62⅛	64½	64½	61⅛	61⅞
S	18	61	62	59⅝	61⅞	61	62	59½	62	61¼	62	59½	61⅞	61	61⅞	59⅛	61¾
M	20	60½	70½	60½	69	62	70	61½	68¾	61⅜	70½	61⅜	68⅞	61	71¼	60½	69¼
T	21	69½	75	69⅜	71⅞	68¾	75	68¾	72	69¼	74½	69¼	71⅞	69½	75	69½	71¾
W	22	70	74⅞	70	72¾	71¾	75	69	72¾	71	74⅞	69¾	72⅞	69¾	75¼	69¾	72¾
T	23	71½	73¾	71½	72½	73	74	71⅞	72½	73	73⅞	72⅜	72⅜	73	73⅞	71¾	72½
F	24	73½	78¼	73¼	77⅞	73	78¾	73	78	73	78¼	73	76⅞	73½	79½	73¼	77⅞
S	25	79½	81¾	79⅛	79½	78⅝	81⅝	78½	79½	80	81½	78¾	79¼	80	82	79	79
M	27	81	81¼	72⅜	72⅞	81	81¼	72½	73⅛	81	81	72¼	72⅞	81½	82	72⅝	73
T	28	68½	69⅞	64	68¾	70	70	64¾	68¾	71	71	64¾	68¾	70	70	65	68⅞
W	29	68⅜	72¾	67⅛	71⅞	69	73⅛	67½	72¼	68¼	73	68¼	71⅞	69½	72⅞	67	72
T	30	71¼	74¾	71¼	72¾	71¾	75	71¾	72⅞	71½	74⅞	71½	72⅝	72	75	72	72⅞
F	31	73½	74⅛	71⅝	71⅞	73½	74½	71½	71⅞	73½	74	71⅝	71⅞	73¾	74¼	71¾	72

THE THORN CREEK POOL.

The oil country has furnished many illustrations of the French proverb, "it is the unexpected that always happens," but none of them have been more remarkable than the recent discovery of a phenomenal patch of gusher territory in Butler county. The old localities in the lower field, once famous in the repertoire of the oil man, had long since been lost to sight, in the rush that followed the discovery of the Bradford and Allegany fields, when Butler rouses from her Rip Van Winkle sleep and startles the oil world, with wells before which the gushers of past days sink into comparative insignificance.

The story of the Thorn Creek development is best told chronologically and the following summary of the most important events in the history of the new field will be found as complete as it is possible to make it from present data.

Near the latter part of May of the present year, Johnson & Co. completed a well on the north bank of Thorn Creek, on the Henderson tract adjoining Sheidemantles' lease of the Wallace on the south. An abundance of salt water was found, with a good quality of sand and a small amount of oil. The following month, Andrew Sheidemantle discovered a fifty barrel pumper on the Renfrew tract, near the mouth of the stream.

On the 27th of June, the Armstrong, Boyd & Semple well No. 1, on their fifty acre lease off the north-west corner of the Marshall tract, struck the sand. There was a strong flow of gas which ignited and destroyed the rig. The well commenced flowing at intervals, and continued to improve until a production of 160 barrels a day was attained and held for some little time. There was a large amount of salt-water at this well and the use of the sucker rod was rendered imperative.

Attracted by the success of the Armstrong well, Phillips Brothers were led to locate on the Bartley farm about 1200 feet to the north-east of the venture on the Marshall. This well proved the initial of a series of gushers that startled the oil world from centre to circumference, and nipped the glowing prospects of a healthy and permanent advance in the crude market with a cold and untimely frost.

On the 29th day of August, this well reached the sand and was reported good for from 75 to 100 barrels, late in the evening of the next day it began flowing heavily and made 450 barrels the first 24 hours. Its second 24 hours output was 350 barrels. On the 1st of September its production was put at 15 barrels an hour. Two days farther drilling increased its output to 55 barrels an hour, and the remarkable record of this great well begins. Deeper drilling increased its output to 110 barrels an hour on the 11th, and agitation and drilling as much as practicable kept it going at from 75 to 125 barrels an hour until the 24th of September, when a half hours drilling brought its production up to 150 barrels an hour. It averaged 124 barrels an hour on the 25th, 115 on the 26th and 27th, and on the 30th was still making 105 barrels every sixty minutes. The first six days of October it averaged above

2,500 barrels a day, dropping to 98 barrels an hour on the 7th and to 95 on the 10th. From this time on the gauges of the Phillips well show a steady decline, which is varied now and then by the use of nitro glycerine. On the 12th of November, its production for an entire day is less than half of one hour's output on the 24th of September.

Johnson & Co.'s No. 2, on the Henderson tract 64 rods south-west of the Phillips gusher, was pronounced dry by the scouts on the 3d of October. On the 8th of the month, the public was admitted to the guarded derrick, and all doubts were dispelled. The regular fourth sand was barren of oil although the well has a fair production of black oil from the "hundred foot" formation.

Christie Brothers No. 1, on the Bartley farm one location west of Phillips No. 1, struck the first "pay streak" on the 11th of October, and started at 34 barrels an hour. The drill was kept going as much as possible, and on the 14th of the month, it responded with the hitherto unprecedented record of 263 barrels, in a single hour.

On October 15th, Fisher Brothers No. 10, near the south-east corner of the Wallace tract, and fifty rods west of the Christie, struck the sand and made a small showing. It was not drilled through the sand until the 20th, when it started at 10 barrels an hour, and gradually lowered its record to less than 100 barrels a day. October 18th, Phillips Brothers No. 3, 375 feet north of their No. 1, struck the sand, which was of excellent quality, but showed unmistakable signs of drainage. It had fifty-five feet of sand, thirty of which was very close and hard. It started at 20 barrels an hour but soon declined to less than 50 barrels a day. A ten-quart shot was exploded in this well on the 28th, but without effecting an increased output.

October 17th, the Connors & Fishell well No. 1, on their lease of Armstrong, struck the oil rock at a depth of 1650 feet. Oil was found when the drill had penetrated the sand a depth of ten feet. It started off at 125 barrels an hour but declined to 80 barrels the following morning. On the 23, deeper drilling improved its production to 165 barrels an hour.

October 20, Phillips Brothers' No. 2, on the Bartley, 300 feet east of No. 1, and 350 north of the Connors & Fishell, commenced flowing. It made 30 barrels an hour from the upper streak of sand and 120 barrels from the "pay streak." This well showed the effect of drainage most unmistakably by declining very fast from its first figures.

Friday, October 24, the Armstrong, Boyd & Semple No. 2, about 450 feet south of Phillips' No. 1, and midway between the Conners & Fishel and the Christie No. 1, was drilling in a very poor quality of sand, and regarded by skillful fieldmen as little better than a dry hole. It was drilled through the sand the following Sunday, and twenty-five feet into the slate. There were no signs of oil or gas, and the word went forth that it was a duster. The owners were discouraged and the trade surprised, but still greater surprises were in store, for the seeming dry hole was soon to be developed into the largest well ever known in the United States. On Monday the 27th of October, the salt water which filled the hole, was bailed down to within 350 feet of the bottom, and a sixty-quart shot inserted. It was thirty minutes before there was any response and then a deluge of oil followed. For the first six hours no oil was saved, but a solid stream of fluid flowed twenty feet above the top of the derrick. When the casing cap was secured the first thirteen hours gauge showed a production of 3813 barrels.

October 27, Fisher Brothers' No. 11, on the Marshall, reached the sand and started at 250 barrels a day. Its greatest production was 70 barrels an hour from the pay streak, but its decline has been exceedingly rapid and it is now merely an ordinary producer.

Two dry holes were completed along what is supposed to be the south-western edge of the field. McBride & Co. on the Henderson tract 350 feet directly south of Johnson & Co.'s No. 2, was shot on the 29th ult. with no results. A. Sheidemantle finished a dry hole on the Moyer farm, 600 feet south of McBride & Co. These tests condemn large tracts of territory to the southwest that looked very favorable when the Phillips' No. 1 was struck.

Fisher Brothers' No. 2, on the Marshall tract, was drilled through the sand and pronounced dry on November 7. It is located southeast of the Sheidemantle duster.

On November 9, Gibson & Gahagen's well, on a five acre lease of the Armstrong purchase was shot with sixty-quarts of nitro-glycerine. It had 1200 feet of salt water in the hole when drilled through the sand but responded to the torpedo at the rate of 70 barrels an hour. It rapidly declined to 27 barrels an hour and then to 21 barrels an hour. It was making 17 barrels an hour on the 16th inst.

Christie Brothers' No. 2, on the Bartley, was drilled 70 feet through an inferior blue sand. It was shot on the 10th of the month with an eighty-quart torpedo, but failed to make any response.

Phillips' No. 4, on the Bartley, reached the sand on the 4th inst. It drilled through forty-five feet of barren sand, and on the 10th was pumping 45 barrels of salt water to 3 of oil. It was shot on the 12th, making 11 barrels in the 24 hours preceding the insertion of the torpedo. Glycerine had no effect upon it and the well is practically of little value.

Following is a condensed history for three days ending November 14.

November 12. Fisher No. 11, made 120 barrels in 24 hours including 15 barrels salt water. Fisher 12 made 2 barrels in 24 hours. Phillips No. 1 made 100 barrels in 9½ hours. No. 3 pumped 80 barrels in 17 hours. Greenlee & Co.'s well in the sand with small show of oil and no salt water. Fisher No. 6, on the Marshall began flowing at 9 p. m. last night. Drilling resumed early this morning and from 7 a. m. to 2 p. m. its output was 120 barrels.

November 13. Fisher No. 3, on the Wallace, shot with 60 qts. at 2 p. m. Made 280 barrels from 2 o'clock till 3. Hour ending 4 p. m. produced 220 barrels. Greenlee well, 18 feet in close white sand, with very little showing.

November 14. Fisher No. 3, declining at the rate of 5 barrels an hour. First gauge this morning made 200 barrels. Second gauge 194. Three p. m. gauge 170 barrels. Fisher 6, making 42 barrels an hour. Increased by deeper drilling to 100 barrels an hour.

Greenlee well 19 feet in the sand, and hole full of oil. At 11:00 a. m. commenced flowing steadily at 65 barrels an hour. Made 208 barrels from noon to 2 p. m. Drilling increased new production to 180 barrels an hour. At 4 p. m. gauged 150 barrels an hour.

The following is a summary of all the wells thus far completed in the vicinity of Thorn Creek with their production as estimated from the field gauges taken for November 15th.

THE THORN CREEK WELLS.

Marshall—Fisher Bros. No. 3	177	4,248
Fisher Bros. No. 9	130	3,120
50 acres—Greenlee & Co.,	100	2,400
" Armstrong & Co. No. 2	95	2,280
" Connors & Fishel	42	1,008
" Gibson & Co.	17	408
" Armsrong & Co. No. 1	—	0
Bartley—Phillips Bro., No. 1	—	120
" " " 2	46	1,104
" " " 3	—	43
" " " 4	—	0
Doods— " " " 1	12	288
Bartley—Christie Bros., No. 1	14	336
" " 2	—	6
Wallace—Fisher Bros., No. 10	—	0
" " " 11	—	80
" " 12	—	2
Henderson—Johnson & Co., No. 2	—	8
Total—18 wells—production		15,445

DRY HOLES.

Henderson—Johnson Brothers & Co., No. 1.
McBride & Co., No. 1.
Moyer— A. Sheidemantle, No. 1.
Marshall— Fisher Brothers, No. 2.

The appended table is a record of the Scout's gauges, from day to day, of the principal Thorn Creek wells. It shows in a very decided manner the decline of the great gushers, and the effect drilling new wells has on the production of the old. These figures include the salt water, and are somewhat in excess of the more exact gauges made by the pipe line employees.

HOURLY GAUGE OF THORN CREEK WELLS.

		Phillips No. 1.	Christie No. 1.	Connor & Fishell No. 1.	Phillips No. 2.	Armstrong No. 2.	Fisher No. 11.	Gibson & Co No. 1.	Total Bbls. Per Hour.
Sept.	1	15	..	..	..	..	..	..	15
	3	55	..	..	..	..	..	..	55
	5	50	..	..	..	..	..	..	50
	7	55	..	..	..	..	..	..	55
	8	63	..	..	..	..	..	..	63
	11	110	..	..	..	..	..	..	110
	14	80	..	..	..	..	..	..	80
	15	75	..	..	..	..	..	..	75
	17	70	..	..	..	..	..	..	70
	20	125	..	..	..	..	..	..	125
	21	134	..	..	..	..	..	..	134
	22	120	..	..	..	..	..	..	120
	23	114	..	..	..	..	..	..	114
	24	150	..	..	..	..	..	..	150
	25	125	..	..	..	..	.	..	125
	26	115	..	..	..	..	..	..	115
	27	115	..	..	..	..	..	..	115
	28	112	..	..	..	..	..	..	112
	29	110	..	.	..	..	..	..	110
	30	105	..	..	..	..	..	..	105
Oct.	1	108	..	..	..	..	..	..	108
	2	106	..	..	..	..	.	..	106
	3	105	..	..	..	..	..	..	105
	4	105	..	..	..	..	..	..	105
	5	105	..	..	..	..	..	..	105
	6	103	..	..	..	..	..	..	103
	7	98	..	..	..	..	..	..	98
	8	105	..	..	..	..	..	..	105
	9	98	..	..	..	..	..	..	98
	10	95	..	..	..	..	.	..	95
	11	95	34	..	..	..	..	..	129
	12	92	54	..	..	..	..	..	146
	13	90	40	..	..	..	..	..	130
	14	83	263	..	..	..	..	..	346
	15	78	201	..	..	..	..	..	279
	16	75	156	..	..	..	..	..	231
	17	76	145	..	..	..	..	..	221
	18	74	146	..	..	..	..	..	220
	19	72	140	80	..	..	..	..	292
	20	70	134	80	30	..	..	..	314
	21	60	130	70	12	..	..	..	272
	22	52	128	70	120	..	..	..	370
	23	48	115	165	85	..	..	..	405
	24	43	103	160	65	..	..	..	371
	25	40	94	130	60	..	..	..	324
	26	37	88	125	58	..	..	..	308
	27	35	90	124	55	..	.	..	304
	28	30	71	95	45	400	12	..	653
	29	27	67	77	44	312	20	..	547
	30	18	47	77	36	230	40	..	448
	31	15	39	67	31	210	30	..	392
Nov.	1	15	40	65	35	203	28	..	386
	2	28	31	58	32	195	26	..	370
	3	25	30	62	92	175	25	..	409
	4	22	27	50	66	175	12	..	352
	5	16	31	52	61	170	11	..	341
	6	9	29	50	54	142	7	..	291
	7	15	25	49	52	138	6	..	285
	8	13	23	46	50	138	5	..	275
	9	13	24	48	50	140	5	..	280
	10	5	20	50	50	132	4	21	282
	11	4	20	47	54	123	4	17	269
	12	3	18	45	48	115	5	17	251

The two Fisher wells on the Marshall tract, swelled the Baldridge production over 9,000 barrels, in a single day. A speedy decline occurred that amounted to 3,000 barrels inside of three days. The high water mark of this phenomenal district appears to have been reached about the middle of the month, and the tide of the Thorn Creek production is rapidly ebbing. On November 15th, the field men recorded a gauge from 18 wells of 15,445 barrels. On the 17th, the gauge was 11,772 barrels, on the 18th, 10,561 and on the 19th, 10,140 barrels.

OCTOBER PRODUCTION REPORT.

Reports from 6,111 Bradford wells, revealed a slight increase in stocks during October, amounting to six-tenths of a barrel to the well.

Time.	No. Wells.	Gross Stocks.	Average per Well.
October 1, 1884	6,111	329,118	53.8
November 1, 1884	6,113	332,530	54.4
Increase,	2	3,412	.6

The number of wells in the Bradford field connected with the pipe lines November 1st, is estimated at 13,336. More wells were abandoned during the past month, than the drill completed. Estimating the entire Bradford region on the basis of six-tenths barrels increase, the total increase in stocks at wells during October, was 8,001 barrels, a daily average of 258 barrels. Adding the increase in stocks to the total runs as reported by the National Transit and Tidewater pipe lines, Bradford's daily average production for October is as follows:

	Barrels.
Average Daily Pipe Line Runs	31,500
Average Daily Increase of Stocks at Wells	258
Bradford's Oct. production, e t.	31,758
do Sept. do do	32,976
do Aug. do do	33,353
do July do do	34,031
do June do do	33,753
do May do do	33,922
do April do do	32,442
do March do do	31,912
do February do do	32,378
do January do do 1884	31,806
do December do do	34,470
do Novemb'r do do	35,026
do October do do	35,654
do Septemb'r do do	34,966
do August do do	35,085
do July do do	34,537
do June do do 1883	35,270

This represents a falling off, in the Bradford production of 1,218 barrels a day as compared with the September estimate, and is the lowest result yet furnished by a production report of the Bradford field.

THE ALLEGANY FIELD.

The stock reports of the Allegany field are summarized as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
October 1, 1884	1,194	45,963	38.5
November 1, 1884	1,196	51,454	43.0
Increase	2	5,491	4.5

The wells from which reports were received, evince an increase of 4.5 barrels to the well. With 3,759 wells in the Allegany field on October 1st, and 3,766 on November 1st, the above figures furnish the following statement:

Time.	No. Wells.	Average per Well.	Gross Stocks.
October 1, 1884	3,759	38.5	144,721
November 1, 1884	3,766	43.0	161,938
Increase	7	4.5	17,217

According to these figures, the total stocks at wells in the Allegany field, increased 17,217 barrels in October, an average daily increase of 555 barrels. The pipe line runs average 8,801 barrels a day. Adding the increase in stocks, Allegany's estimated daily production for October is 9,356 barrels, a decrease of 541 barrels a day from the preceding month.

	Barrels.
Allegany's October production is estimated at	9,356
Allegany's September production is estimated at	9,877
Allegany's August production is estimated at	10,384
Allegany's July production is estimated at	11,218
Allegany's June production is estimated at	11,108
Allegany's May production is estimated at	11,547
Allegany's April production is estimated at	11,848
Allegany's March production is estimated at	11,768
Allegany's February production is estimated at	11,607
Allegany's January production is estimated at	11,263
Allegany's December production is estimated at	12,437
Allegany's November production is estimated at	12,678
Allegany's October production is estimated at	13,089
Allegany's September production is estimated at	12,335
Allegany's August production is estimated at	12,264
Allegany's July production is estimated at	12,345

WARREN, FOREST AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Warren, Forest and the Lower Country. The number of wells on the first of each month, with their averages, are contained in the following statement:

Field.	No. Wells. Oct. 1.	No. Wells. Nov. 1.	Average per Well. Oct. 1.	Average per Well Nov. 1.
Clarendon & Tiona	146	144	56	46
Cherry Grove	50	50	79	78
Cooper District	172	172	92	90
Lower Country	95	97	63	69
Miscellaneous	147	144	157	137

Accepting the outside runs, which are partially made up of the Wardwell and Baldridge runs, as representing the production, an estimate on the yield of the field for October and September would be as follows:

Field.	Oct. Barrels.	Sept. Barrels.
Allegany	9,356	9,877
Bradford	31,758	32,976
Outside runs	22,762	22,514
Total	63,876	65,367

The above figures show a decrease in the production of the entire region of 1,491 barrels per day. In these estimates no account is taken of the "dump oil" loaded on the cars direct from the wells at Emlenton and other points along the Allegheny river.

The runs from the Baldridge field increased at the rate of 3,390 barrels a day in October. During the same period, the Wardwell runs declined 1,855 barrels per diem. Cherry Grove, Cooper and Balltown declined 885 barrels a day and Bradford and Allegany show a drop of 3,136 barrels a day.

Jones & Laughlin struck a large vein of gas in their well near the foot of South Twenty-six street, in the city of Pittsburgh on the 18th, inst. The well was started early in June, and abandoned when a depth of 1,500 feet had been reached. It was started again about three weeks ago and drilled 300 feet deeper. A supply of gas has been discovered sufficient to run the mills, but the owners will not rest until the well has been put down at least 2,000 feet.

THE PETROLEUM AGE.

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NATURAL GAS.

By C. E. Hequembourg.

[From a paper read at the Annual Meeting of the American Gas-Light Association.]

Natural gas attracted attention as an agent for illumination as long ago as 1821, when a gas spring was discovered at Fredonia, N. Y., within a rod of the old State road that passes through the village. The spring as then, is now located in the slate rock that forms the bank of the Canadaway Creek. Gas was collected by excavating and covering the spring, conveyed into a small copper holder, and from thence conducted through pipe to a mill and several stores for illumination. To Mr. Elias Forbes, of Fredonia, I have been for many years indebted concerning information given regarding this gas; and he now vouches for the accuracy of the following statement obtained from a history of Chautauqua county.

"The use of natural gas at Fredonia was begun in 1821, when experiments were made to determine its illuminating value, and it was introduced into a few of the public houses, among which was the hotel that then occupied the site of the Taylor House, and which was thus illuminated when Lafayette passed through the village in 1824. The gas so used at that time was the first used in the United States, and the gas works established here were the first in this country. The spring first discovered and from which gas was first used is located on the north bank of the Canadaway Creek, at the bridge crossing the stream on Main street, in the village of Fredonia. The gas escaped in various places in the immediate vicinity; but when the well was sunk it was all drawn to it. The gas from this well, which was sufficient for thirty burners, was used alone till 1858, when another was sunk on the creek in the northwest part of the village, by Preston Barmore, the shaft being thirty feet deep, six feet in diameter at the top, and fourteen feet at the bottom, with two vertical borings, one of 100 and the other of 150 feet in depth. In the fall of 1858 Elias Forbes, the present president of the gas company, purchased a half interest in the well, and that fall a company was formed, and during the remainder of that and the following year the gas, in sufficient quantity to supply about 2,000 cubic feet of gas per day, was conducted to the village through three miles of mains, and supplied directly from the well to the stores of the village. During the latter year (1859) the company put in a gas receiver or holder of 12,000 cubic feet capacity, and supplied private houses. In the fall of 1871 Alvah Colburn made a boring for gas near his mill, with a view to supplying fuel for generating steam therefor; but the supply was inadequate for that purpose, though it was evolved in considerable quantity. He therefore purchased the Barmore interest in the gas company, and connected his well, which is 1,200 feet deep, with the company's receiver; since which time the supply of gas has been ample for the demands of the village. Previous to the opening of Colburn's well the supply of gas was not sufficient to meet the demands for it during the winter, and the deficiency was made up by gas manufactured from coal. Prof. Hoadley's experiments show that the consumption of natural gas as compared with that manufactured from coal, through burners of equal capacity, and in equal times, is less than one-half, with a greater candle power. He shows that a burner which consumed six feet of coal gas in one hour, with an illuminating power equal to fourteen sperm candles, six to the pound, consumed of the natural gas a fraction less than three feet, with an illuminating power of a little more than sixteen sperm candles. The natural gas also possesses a greater diffusive power, and one who has been accustomed to the use of coal gas, finding it difficult to read ordinary print without being in close proximity to the light, is astonished at the facility with which he can read in any part of an ordinary-sized dwelling room under the light from the natural gas."

For an analysis of this gas, and that of other gases, especially that obtained from the Wilcox well, in Sergeant Township, McKean County, Pa., from which, and others near by, the city of Bradford obtains its present supply, I copy from the paper of Prof. Samuel P. Sadtler, read before the American Philosophical Society, March 2d,

1877: "During the past summer (1876) I was again employed in the service of the Second Geological Survey of the State, and spent a month in the oil regions of Pennsylvania. While on this trip I collected six new lots of natural gases, and have recently completed my examination of them. * * *,

"Result of the analysis of the gas obtained from the Wilcox well, in August, 1876:

Carbonic acid	.02
Carbonous oxide	.15
Ethylene series	.62
Hydrogen	7.55
Marsh gas	62.37
Ethyl-hydride	29.29
Prophyl-hydride	trace.
Oxygen	—
Nitrogen	—
	100.00

* * * * * * *"

The analysis of gases obtained from the Lake Erie border in Pennsylvania and New York are also found in this paper; No. 1 being of Erie gas, from Erie, Pa.; No. 2, of older Fredonia well; No. 3, of newer Fredonia well, and collected in August, 1876, resulting as follows:

"No. 1—Carbonic acid		.30		
Carbonic oxide		.61		
Ethylene series		—		
Hydrogen		.43		
Marsh gas	40.33			69.44
Ethyl-hydride	64.56	98.59		trace
Prophyl-hydride	trace			29.15
Oxygen		.07		
Nitrogen		—		
		100.00		
"No. 2—Carbonic acid		.44		
Carbonic oxide		.84		
Ethylene series		.42		
Hydrogen		8.56		
Marsh gas	40.83			65.28
Ethyl-hydride	48.90	89.73		trace
Prophyl-hydride	trace			24.55
Oxygen		—		
Nitrogen		—		
		99.99		
"No. 3—Carbonic acid		.28		
Carbonous oxide		.22		
Ethylene series		.47		
Hydrogen		7.49		
Marsh gas	26.99			59.27
Ethyl-hydride	46.90	91.55		trace
Prophyl-hydride	trace			32.28
Oxygen		—		
Nitrogen		—		
		100.01		

"The hydrocarbons of the marsh gas series in these three analyses can be counted together with perfect accuracy, 98 59-100; 89 73-100; and 91 55-100 per cent. respectively; or we have a choice of two methods of reckoning the individual amounts, with proximate accuracy, however, only. In these analyses the second method of estimation, viz: that of dividing the amount between marsh gas and prophyl-hydride, appears the more probable. A casual examination of these figures, with a reference to the approximate geological horizon in each case, will show several well-marked peculiarities. * * *

"The gas from the McKean County geological horizon, obtained at the Wilcox well, is distinctly different from any of those preceding it. The 29.29 per cent. ethyl-hydride makes it a heavier gas. The three gases from the Lake Erie border, however, show the greatest differences. The per cent. of the ethyl-hydride exceeds the per cent. of marsh gas, so that it becomes reasonable to estimate some of these heavy hydro-carbons as prophyl-hydride. These three gases would be the heaviest of all those examined. An experimental determination of the specific gravity of the Erie gas, made by the diffusive method, gave 804; the specific gravity as calculated from the analysis was 845."

After gas was found at Fredonia such discoveries from year to year became more common. Judge Campbell, of Westfield, N. Y., by contract with the U. S. Government, lit (until abandoned about the year 1856) the lighthouse at Barcelona (a small harbor on Lake Erie) from a spring of natural gas.

In 1827 a contract was made by Walter Smith, of Dunkirk, with the Government to light the lighthouse at that place, and a ½ inch lead pipe was laid 2½ miles from the Matteson gas spring at Fredonia; but, owing to the size of the pipe, no flow was obtained, and after many trials of other means of transportation the enterprise was abandoned. With the discovery of oil at Titusville, Pa., in 1858-9, the many borings yielded more or less gas, and the first public notice taken of it in quantity was the burning of the Rouse well, in Oil Creek, where a large number of persons lost their lives by the explosion of gas, it having been fired from a lighted cigar. As strange as it may seem, this gas was then considered more of a nuisance than an article of value, and but little was used as fuel—it was mostly led from the wells in pipes and burned so as to dispose of it. Anyone who passed through Petroleum Centre in 1869, when the oil development of McCray Hill was in its prime, cannot fail to remember this great waste of valuable fuel.

With the improved methods of dry drilling, gas has been more easily found and controlled; and although natural gas in late years has been found outside of the oil regions, where there was even no indication of oil, such facts only tend to strengthen some of the theories advanced regarding its origin. The most reasonable is that gas is found in the sand rock or oil sand only, as is salt water; and that its presence there is owing to fracture of the rock below. All gas wells of great volume are supposed to be fissure wells—the gas being generated in the carbonaceous shale hundreds of feet below any

of the oil-producing sands. That this is reasonable may be concluded from the fact that the largest wells do not at all times fill up the adjoining sand rock, but only the faults or extreme edges; and it is a known fact that in sand rock where there is the most oil the gas is lightest, and where there is little oil the gas is strongest.

As an illustration of the volume or pressure of gas, the wells used for the supply of the city of Bradford, located in Sergeant Township, Pa., are showing a pressure, confined, of 550 lbs. to the square inch; while that shown at ordinary oil wells, under like conditions, varies from the atmosphere to sixty pounds. The pressure at all times does not indicate the producing power of a well; but, as before suggested, the location of a well near to a fissure should make it lasting and profitable; or if too far remote, unsatisfactory and of small value.

A complete and valuable record and history of several of the wells now controlled and used in supplying the city of Bradford, can be found in report of the Second Geological Survey of Pennsylvania, by Chas. A. Ashburner (pages 146 to 167, relating to Sergeant Township), published in 1880. The first of these wells was drilled in 1864, and there is no section of territory yet developed that has produced a like quantity of gas.

For fuel in the manufacture of steel, iron and glass, the past two years' experience in the city of Pittsburgh, Pa., indicates that natural gas can take the place of other fuel to the advantage of the manufacturer; and, therefore, an elaborate comparison of cost between this gas and coal is not necessary, and would be made at great disadvantage as there is no city in this country where coal is so cheap as at Pittsburgh. Were it not for the fact that gas fuel is so easy to control, clean, pure and capable of raising the most intense heats, and that such considerations increase its value by the saving of labor and saving of the materials manufactured, it could not be used for these purposes, as will be shown hereafter by some limited tests as to its caloric power expressed in cubic feet, compared with a pound of coal, etc. For combined purposes of heat and light, "The Bradford Gas Light and Heating Company" supply an average daily demand of several millions cubic feet. This is done at an estimated cost to the consumer of thirteen cents per 1,000 cubic feet. The candle power of the gas supplied varies from 8 to 24, and the specific gravity, as shown by Prof. Sadtler, is about 804.

The gas registers in meters a little less than one-half that of coal gas, burned in the same time, through the same burner, with equal pressure. In order to supply the great demand for this gas the company own and control eight thousand acres of gas land, twenty-nine miles of eight-inch, seven miles of six, and several miles of 5⅝-inch, 3-inch and 2-inch cast and wrought iron high-pressure conduits, that carry gas from fields distant from Bradford two, twelve, and twenty-five miles. These mains carry variable pressure of 50 to 160 pounds to the square inch; and in order to increase the flow through these pipes during extreme weather they operate a pump station of 580-horse power to compress, and by this additional pressure and acceleration of volume, increase the flow. Results of many average tests show:

First—Compared with coal gas, natural gas exceeds it in caloric value 33⅓ per cent.

Second—With crude, ordinary, and best methods for combustion, the caloric value of natural gas, compared with coal under best conditions, is—

With crude method	 20	cubic feet	=1	lb. coal.
" ordinary "	. . . . . 11.29	"	=1	"
" best "	. . . . . 8.92	"	=1	"

Third—The value of 1,000 cubic feet of natural gas, under conditions below, compared with coal at $1.00 per ton of 2,000 lbs.:

With crude method of carbonization	0250	per 1,000.
" ordinary " "	0443	"
" best " "	0635	"

PETROLEUM REFUSE AS A FUEL FOR LOCOMOTIVES IN RUSSIA.

The first experiments in the use of petroleum as a fuel for locomotives in Russia, were made on the Grazi & Tsaritsin railway, in 1874; but owing to its great cost at that time, although found in other respects capable of being used as a fuel, it was abandoned as uneconomical. Recently several appliances have been invented for utilizing liquid fuel for locomotive and other boilers, and have been attended with more or less success.

The capabilities of liquid hydro-carbon as fuel, and the method of its employment, are but little known in Europe, its use being confined almost entirely to Southeast Russia, the only country on the continent of Europe where it is found in very great quantities. The by-products or refuse of the Russian petroleum are used for the manufacture of lubricating oils, but more generally fuel. The quanity of refuse in proportion to the distilled kerosene is very great; the finest Russian kerosene amounts to only

about 25 per cent. of the original weight of crude oil used, and ordinary commercial kerosene to only about 30 per cent., the remaining 70 to 75 per cent. being therefore available as fuel.

Much has already been written as to the efficiency of hydro-carbon liquid fuels, but a good deal remains to be made clear on the subject. Comparing naphtha refuse and anthracite, the former has a theoretical evaporative power of 16.2 lbs. of water per pound of fuel, and the latter of 12.2 lbs. at a pressure of 8 atmospheres or 120 pounds per square inch; hence petroleum has weight for weight 33 per cent. higher evaporative power than anthracite. Now, in locomotive practice, a mean evaporation of from 7 to 7½ lbs. of water per lb. of anthracite is about what is generally obtained, thus giving about 60 per cent. of efficiency, while 40 per cent. of the heating power is unavoidably lost. But with petroleum an evaporation of 12.25 lbs. is practically obtained, giving 75 per cent. of the theoretical efficiency. Thus in the first place, petroleum is theoretically 33 per cent. superior to anthracite in evaporative power; and secondly, its useful effect is 25 per cent. greater, being 75 instead of 60 per cent.; while, thirdly, weight for weight, the practical evaporative power must be reckoned as at least 63 to 75 per cent. higher than that of anthracite.

Locomotives.—In arranging a locomotive for burning petroleum, it is necessary to add several details in order to make the application convenient. In the first place, for getting up steam to begin with, a gas pipe of one inch diameter is fixed along the outside of the boiler, and at about the middle of its length it is fitted with a three-way cock, having a screw nipple and cap. The front end of the longitudinal pipe is connected to the blower in the chimney, and the back end to the spray injector. Then by connecting to the nipple a pipe from a shunting locomotive under steam, the spray jet is immediately started by the borrowed steam, by which at the same time a draught is also maintained in the chimney. In a fully equipped engine house the borrowed steam would be obtained from a fixed boiler conveniently placed and specially arranged for the purpose of raising steam. In practice steam can be raised from cold water to 45 pounds pressure in twenty minutes. The use of auxillary steam is then dispensed with and the spray jet is worked by steam from its own boiler; a pressure of 120 lbs. is thus obtained in 50 to 55 minutes from the time the spray jet was first started. In daily practice, when it is only necessary to raise steam in boilers already full of hot water, the full pressure of 120 lbs. is obtained in from 20 to 25 minutes.

The fuel tank is placed in the tender between the two side compartments of the water tank, thus utilizing the original coal space. As three sides of the petroleum tank already existed in the old coal engines, all that was required was to put a bulk-head in front, and to plate the top and bottom, thus giving the tender a flat top or platform like appearance. One advantage arising from this arrangement is that in the winter, while heating the water in the tender, the heat is transmitted to the petroleum through the two sides and rear end of the tank. But in addition it is also indispensable to place a warming coil of steam pipe close by the outlet oil valve in the tank; through this coil a constant small upward flow of steam is maintained, entering at the bottom and issuing into the air at one side of the top of the tender, so that the engineer can always see that steam is really passing through the coil. The warming is always necessary when the air temperature falls about 12° Fahrenheit below freezing point.

The petroleum is transported from Baku in tanks; and in some cases wooden barges, which were not specially prepared for the purpose, are filled with petroleum. Thus a great quantity of water gets mixed up with the petroleum by leakage, etc. So long as the petroleum is cold, say below freezing point, the water does not easily separate from it. But whenever it is warmed, say to 50° Fahrenheit, the water separates readily. On each tender tank is placed a water collector, having a cock for letting off the water as it accumulates. A gauge glass is also attached to each tender tank, so that a glance tells how fast the petroleum is being consumed. For a six-wheeled locomotive, the capacity of the tank is 3½ tons of oil; a quantity sufficient for 250 miles, with a train of 480 tons gross, exclusive of engine and tender.

The Spray Injector.—Steam not superheated, is, of course, the most convenient for injecting the spray of liquid fuel into the furnace. The work of a locomotive boiler is very different from that of a marine or stationary boiler, owing to the frequent changes of gradient on the line, and the frequent stoppages at stations. These conditions render firing with petroleum very difficult; and were it not for the part played by properly arranged brick-work inside the fire box, the spray jet alone would be

quite inadequate. The object of all spray injectors is the minute subdivision of a jet of petroleum into fine spray, by means of steam or compressed air, so as to render it inflammable and of easy ignition. They are made with long and narrow orifices for petroleum as well as for steam, and in some instances are capable of being adjusted to different widths. With such narrow orifices it is clear that any small, solid particles, which may find their way into the spray injector, will check the fire. Hence in many of the steamboats on the Caspian Sea, although a single spray injector suffices for one furnace, two are used, in order that when one gets fouled the other may still work; but of course the fouled orifices require constant cleaning out. On the railroads the man-holes of each tender tank are provided with strainers of wire cloth, of two different meshes, which are occasionally taken out and cleaned, and there is generally another strainer at the outlet valve, inside the tank, so that no solid particle may mix with the oil and cause delay, by choking the spray injector. The construction of the spray injector is very simple, and its merit is enhanced by the facilities it affords for stopping the fire at a moment's notice, as well as for regulating it to the utmost nicety during running or when standing at stations, in accordance with the demands made upon the boiler.

Driving of Locomotives.—In lighting up, certain precise rules have to be followed, in order to prevent explosion of any gas that may have accumulated in the fire box. Such explosions do often take place in cases of negligence; but they amount simply to a puff of gas, driving smoke out through the ash pan dampers, without any disagreeably loud report; this is all prevented by adhering to the following simple rules: First, clear the spray nozzle of water, by letting a small quantity of steam blow through with the ash pan doors open; at the same time start the blower in the chimney for a few seconds, and the gas, if any, will be immediately drawn up the chimney; next place on the bottom of the combustion chamber a piece of cotton waste or a handfull of shavings saturated with petroleum, and burning with a flame. Then by opening, first the steam valve of the spray injector, and next the petroleum valve gently, the very first spray of oil coming on the flaming waste immediately ignites without any explosion whatever; after which the quantity of fuel can be increased at pleasure. By looking at the top of the chimney, the supply of petroleum can be regulated by observing the smoke; the general rule is to allow a transparent light smoke to escape, thus showing that neither too much air is being admitted, nor too little. The combustion is under the control of the driver (engineer), and the regulation can be so effected as to prevent smoke altogether.

While running, it is indispensable that the driver and fireman should act together, the latter having at his side of the engine the four handles for regulating the fire; namely, the steam wheel and the petroleum wheel for the spray injector, and the two ash pan door handles in which there are notches for regulating the air admission. Each alteration in the position of the reversing lever or screw, as well as in the degree of opening of the steam regulator or the blast pipe, requires a corresponding alteration of the fire. Generally, the driver passes the word when he intends shutting off steam, so that the alterations in the firing may be effected before the steam is actually shut off; and in this way the regulation of the fire and that of the steam are virtually done together. All this care is necessary to prevent smoke, which is nothing less than a waste of fuel.

At present seventy-two locomotives are running with petroleum firing; ten of them are passenger engines, seventeen are eight-wheel coupled goods (freight) engines, and forty-five are six-wheel coupled.

The length of the line now worked with petroleum is from Tsaritsan to Burnack, 291 miles. There is a main iron reservoir for petroleum at each of the four engine sheds, namely at Tsaritsan, Archeda, Filonoff and Borisoglebsk. Each reservoir is 66 feet internal diameter and 24 feet high, and when full holds about 2,050 tons (16,000 barrels). It generally stands a good way from the line, and at a convenient distance from all dwelling houses and buildings. In addition to the main storage reservoir, each engine shed is provided with a smaller distributing tank, erected at a sufficient height to supply the tenders. These are circular, about 8½ feet in diameter and 6 feet high. They are accurately gauged, and proper tables calculated, by means of which it can be found out to a pound with how much fuel each engine is supplied. Both the quantity and the temperature are recorded on the driver's fuel bill at the time of taking a supply.

Up to the present time the author has altered seventy-two locomotives to burn petroleum, and from his own personal observations made on the

foot plate with considerable frost, he is satisfied that no other fuel can compare with petroleum, either for locomotives or for other purposes. Its safety in case of accident was well demonstrated by an accident that occurred Dec. 30th, 1883, when a locomotive fired with petroleum, ran down the side of an embankment, taking the train after; no explosion or conflagration of any kind took place under such trying circumstances, thus affording satisfactory proof of the safety of petroleum refuse in this mode of firing.

A series of experiments have been conducted on the Grazi & Tsaritsin railroad, to arrive at the comparative cost of petroleum and other fuels, with the following general results:

A continuous set of seventeen continuous trips with petroleum alone for fuel, made during extremely frosty weather, showed an average consumption of 39.15 lbs. of petroleum per train mile.

A continuous set of nineteen trials made in the summer with petroleum alone, under ordinary conditions of traffic, showed a mean consumption of 32.08 lbs. per train mile, including lighting up. The mean evaporation per lb. of fuel was 11.35 lbs. of water from an initial temperature of about 55° Fahrenheit; the theoretical evaporative power being 16.2 lbs. of water, the useful effect was therefore 70 per cent.

Two sets of comparative trials were made, both of them in winter, with three Schneider engines. In comparison with anthracite, the economy in favor of petroleum refuse was 41 per cent. in weight and 55 per cent. in cost. With bituminous coal there was a difference of 49 per cent. in favor of petroleum as to weight and 61 per cent. as to cost. As compared with wood, petroleum was 50 per cent. cheaper. These trials were made under exactly similar conditions as to type of engine, profile of line and load of train.

Comparative tests made in summer with petroleum refuse versus bituminous coal and anthracite, at a mean speed of fifteen miles an hour. As compared with bituminous coal, petroleum refuse showed an advantage of 56 per cent. in weight and 66 per cent. in cost; and in comparison with anthracite its economy is 52 per cent. in weight and 63 per cent. in cost.

The results of the monthly averages for the year 1883 of consumption and cost of fuel per train mile in locomotives of the different classes, working main line freight, mixed and passenger trains, are summarized as follows: The mean result of the whole year is a coal consumption of 69.80 lbs. as compared with 43.19 lbs. of petroleum, at a cost of 10.212 pence for coal and 5.495 pence for petroleum; being an advantage of 38 per cent. in weight and 46 per cent. in cost of petroleum refuse. This was from engines with six wheels coupled, working goods trains. For engines with four wheels coupled, working passenger trains, the mean result per train mile is 39.38 lbs. of coal against 29.62 lbs. of petroleum at a cost of 5.672 pence for coal and 3.808 pence for petroleum; being an advantage of 25 per cent. in weight and 33 per cent. in cost of petroleum refuse.

The average price of fuel throughout the year was 23s. 4d. ($5.50) per ton for petroleum refuse and 27s. ($6.50) per ton for coal.

Besides firing locomotives, which was the main problem on the Grazi and Tsaritsin railway, the use of petroleum is equally economical in firing other boilers. At present a Galloway boiler, having two furnaces, is fired with petroleum at the Borisoglebsk shops. The shop boiler at Tsaritsin is likewise fired in the same manner. There is one case of a ten-horse pumping engine on the banks of the Volga, where the boiler is horizontal and tubular, and is fired with petroleum under the cylindrical part. As it is there necessary to raise steam sometimes from cold water, the regenerator or fire brick chamber is so arranged as to admit of wood firing to begin with.—*From a paper read by Thomas Urquhart, of Russia, before the British Institution of Mechanical Engineers.*

ALDEN'S LITERARY REVOLUTION.

John B. Alden's *Literary Revolution*, though, possibly, not making so large a "noise" in the world as three or four years ago when its remarkable work was new to the public, is really making more substantial progress than ever before. A noticeable item is the improved quality of the books issued. Guizot's famous "History of France," not sold, till recently, for much less than $50.00, is put forth in eight small octavo volumes, ranking with the handsomest ever issued from American presses, including the 426 full page original illustrations, and is sold for $7.00. Rawlinson's celebrated "Seven Great Monarchies of the Ancient Eastern World," is produced in elegant form, with all the maps and illustrations, reduced in price from $18.00 to $2.75. These are but representative of an immense list of standard works, which are set forth in a descriptive catalogue of 100 pages, and which is sent free to every applicant by John B. Alden, 393 Pearl street, New York.

THE REFINED MARKET.

During the month of November the refined market ruled very quiet, the price varying but little from a basis of 7¾ cents for 70° Abel test, New York, Philadelphia and Baltimore loading. The same characteristics that apply to the crude market may be stated in regard to the refined. Foreign buyers are steadily watching the development of the Thorn Creek field, and in spite of their steadily decreasing stocks, take only what their urgent necessities demand. With Thorn Creek once positively defined and the probable area of its prolific territory settled, the prospects are that Europe would become a heavy purchaser in our market. The sales of refined for the entire month are estimated from 360,000 to to 375,000 barrels.

The demand for refined in cases still continues good, and is the only thing that may be said to give life to the market. The price remains at 9¼ cents for the plain brands. The following from Mr. Lincoln's monthly circular represents the exports of refined in cases to China and the East for the first eleven months of the years 1883 and 1884.

	1884.	1883.
To China	1,389,722	1,084,807
" Japan	1,244,382	2,144,646
" Bombay, Calcutta, Rangoon, etc,	3,164,547	1,647,066
" Java, Angier	2,794,496	2,751,409
Total	8,593,147	7,627,928

The domestic trade has been quite large, and a good business is still being done at 9¾ to 10 cents for N. Y. State test.

Naphtha and residuum have been only moderately inquired after on the part of the foreign buyer. Gasoline has a steady demand from home consumers.

	New York.	Philadelphia.	Baltimore.	London and Liverpool.	Bremen.	Antwerp.
	Cts.	Cts.	Cts.	Pence.	Marks.	Francs
S 1	7¾	7¾	7¾	6⅝	7 35	19⅛
M 3	7¾	7¾	7¾	6⅝	7 50	19
T 4	7¾	7¾	7¾	6⅝	7 40	19
W 5	7¾	7¾	7¾	6⅝	7 40	19
T 6	7¾	7¾	7¾	6⅝	7 40	19
F 7	7¾	7¾	7¾	6⅝	7 40	19
S 8	7¾	7¾	7¾	6⅝	7 40	19
M 10	7¾	7¾	7¾	6¾	7 40	19
T 11	7¾	7¾	7¾	6⅝	7 40	18⅞
W 12	7¾	7¾	7¾	6⅝	7 40	18⅝
T 13	7¾	7¾	7¾	6⅝	7 40	18⅜
F 14	7¾	7¾	7¾	6⅝	7 35	18¼
S 15	7¾	7¾	7¾	6⅝	7 35	18¼
M 17	7¾	7¼	7¾	6¾	7 35	18⅜
T 18	7¾	7¾	7¾	6¾	7 35	18½
W 19	7¾	7¾	7¾	6¾	7 35	18⅜
T 20	7¾	7¾	7¾	6¾	7 35	18⅜
F 21	7¾	7¾	7¾	6¾	7 35	18⅛
S 22	7¾	7¾	7¾	6¾	7 35	18¼
M 24	7¾	7¾	7¾	6½	7 25	18⅛
T 25	7¾	7¾	7¾	6½	7 25	18¼
W 26	7¾	7¾	7¾	6½	7 25	18¼
T 27						
F 28	7⅞	7¾	7¾	6½	7 30	18⅛
S 29	7⅞	7¾	7¾	6½	7 30	18⅛

CRUDE MARKET FOR NOVEMBER.

There is little of interest to chronicle in the course of the crude market for November. Fluctuations were small, business light and the entire trade seemed inclined to favor a state of waiting expectancy, while all activity ceased. In the absence of speculative trading, all news from the Butler county gusher territory was earnestly perused and discussed. The varying gauges of the big wells, the effect of heavy charges of nitro-glycerine, and the inroads of salt water in the field were the principal topics of conversation. In the meanwhile the market drifted along, apparently sustained by heavy dealers from falling very low, and restrained from rising by fear of more surprises from Thorn Creek. The range of prices was between 67 and 80 cents. Several times during the month a decidedly bearish feeling was manifest, but the consequent depression was each time arrested in the neighborhood of 70 cents, which seemed to be the rallying point for the bull forces. The Thanksgiving holiday was made good use of to spread renewed interest abroad, and a large buying interest coming in there was a sharp and decided advance of seven cents.

The opening price of the month was 71½ to 71¾ and 75⅜ cents was the highest price recorded during the first three weeks. The month closed with certificates very firm at 78⅝ to 78⅞ cents. The lowest price for the month was 67 cents, which was reached on the 14th and the highest, 80 cents, on the 29th. These two extremes were touched in the Pittsburgh market. Thus the extreme range for the entire month was but thirteen cents, as compared with a range of twenty-three cents for October.

The average price for the month on the floor of the Bradford Exchange was 72½ cents, against 71 cents in October and 78 cents in September. The average price for November one year ago was $1.14⅘.

The slackness of the market is well illustrated by the decline in the volume of business at the clearing house, the aggregate of which is nearly 50 per cent below last month's figures.

THE CLEARANCES.

	November. Barrels.	October. Barrels.	September. Barrels.
Bradford Oil Exchange	69,610,000	123,458,000	131.922,000
Bradford Prod. Pet	—	28.500,000	28,278,000
Oil City	89,176,000	189,453,000	207,452,000
New York, N. Y. Pet	82,448,000	148,374,000	164,612,000
New York, National	166,986,000	295,720,000	328,357,000
Pittsburgh Oil (old)	—	—	6,000,000
Pittsburgh Petroleum (new)	46,418,000	106,358,000	120,000,000
Total	454,638,000	891,871,000	986,621,000

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to December 1st, 1884.

1882.	Ch'y Gr've.	Cooper.	Balltown.	Total.	Daily Av'ge
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
April	31,191	126,860	71,989	230,040	7,668
May	30,010	107,514	70,069	207,593	6,696
June	25,348	89,554	67,508	182,410	6,080
July	16,206	76,762	76,601	169,569	5,470
August	20,615	63,415	67,883	151,913	4,900
September	19,590	64,648	63,453	147,691	4,923
October	13,824	56,151	55,211	125,186	4,038
November	12,689	39,065	42,025	93,779	3,126
Total Dec. 1, '84	3,353,254	2,091,650	1,549,586	6,994,490	7,409

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to Dec. 1st, 1884. Cherry Grove has produced 3,353,254 barrels, Cooper 2,091,650 and Balltown 1,549,586 barrels. The daily average runs from the three fields during November were 3,126 barrels, a decrease of 912 barrels from the October figures. The daily average runs from the old Cooper section during November were 637 barrels, and of the Henry's Mill pool 665, making a total of 1,302 barrels. The daily average of the Cooper district for October was 1,811 barrels and for September 2,155 barrels. The Balltown field has a daily average of 1,401 for November, against 1,781 in October and 2,115 in September. Cherry Grove averaged 423 barrels a day in November and 446 in October.

BALDRIDGE AND WARDWELL

The two new white sand fields, Baldridge and Wardwell, are enumerated in the list. The pipe line runs from these sections since April 1st, have been as follows:

Month.	Baldridge Runs.	Daily Average.	Wardwell Runs.	Daily Average.
April	25,325	844	14,263	475
May	32,885	1,061	31,451	1.015
June	29,070	969	61,260	2,042
July	27,545	889	132,595	4,277
August	26,134	843	200,985	6,483
September	79,324	2,644	121,683	4,056
October	187,068	6,034	68,256	2,201
November	284,806	9,493	40,376	1,346

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590
April, 1884	34,370	12,261	19,162	65,793
May, 1884	34,946	12,193	19,549	66,688
June, 1884	35,701	11,672	19,977	67,350
July, 1884	34,718	11,114	20,870	66,702
August, 1884	33,782	10,384	22,830	66,996
September, 1884	33,449	9,989	22,514	65,952
October, 1884	31,500	8,802	22,762	63,064
November, 1884	29,552	8,642	23,557	61,751

SUMMARY of the statement by the United Pipe Lines December 10, 1884:

Acceptances and certificates, November 30	13,641.25
Credit balances November 30	25,129.56
Total liabilities November 30	38,770.81
Gross stocks	38,770.81
Sediment and surplus	....
Receipts from all sources	....
Net stocks delivered to National Transit Co November	6,484.57

OCTOBER SUMMARY.

Outstanding acceptances and certificates October 31	13,641.25
Credit balances	31,614.13
Total liabilities October 31	45,255.38
Gross stocks	45,255.38
Sediment and surplus	....
Receipts from all sources	....
Total deliveries	5,182.68

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for November, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of November		1,510,227.30
Quantity of crude petroleum at close of Nov.	1,588,769.23	
Less sediment and surplus	70,308.05	
		1,518,461.18
Receipts during November		202,573.21
Deliveries during November—to refiners	189,802.89	
" " " —to other parties	.....	
		189,802.89
Outstanding certificates, accepted orders, etc		831,000.00
Credit balances		687,461.18
Total liabilities November 30, 1884		1,518,461.18

OCTOBER SUMMARY.

		Barrels.
Quantity of crude petroleum in custody at beginning of October		1,536,662.62
Quantity of crude petroleum at close of Oct.	1,587,494.65	
Less sediment and surplus	77,267.35	
		1,510,227.30
Receipts during October		221,275.58
Deliveries during October—to refiners	244,936.82	
" " " —to other parties	....	
		244,936.82
Outstanding certificates, accepted orders, etc		813,000.00
Credit balances		697,227.30
Total liabilities October 31, 1884		1,510,227.30

SUMMARY of the statements of the National Transit Co., for November and October, 1884.

	November.	October.
Receipts from all sources	1,645,549.18	1,724,549.61
Deliveries	1,874,330.79	2,246,091.22
Gross stocks end of month	38,349,404.31	38,809,635.06
Sediment and surplus	2,135,676.05	2,330,779.62
Total liabilities end of month	36,213,728.26	36,478,855.44
Outstanding acceptances	28,594,995,90	28,652,312.00
Credit balances	7,618,732.36	7,826,543.44

The above receipts from all sources for November were made up as follows:

Transferred from United Pipe Lines, as reported to N. F. Hilton, Esq., representing the Conference of Oil Exchanges	6,484.57	
Less sediment and surplus	. . .	
Net amount from United Pipe Lines		6,484.57
Runs from wells		1,639,164.61
Received in iron tanks		. . . . .
Total barrels		1,645,649.18

The above receipts from all sources for October were made up as follows:

Transferred from United Pipe Line as reported to N. F. Hilton, representing Conference of Oil Exchanges	5,182.68	
Less sediment and surplus	. . . .	
Net amount from United Pipe Lines		5,182.68
Runs from wells		1,719,366.93
Received in iron tanks		. . . . .
Total		1,724,549.61

THE AVERAGE PRICE OF CRUDE.

The following table gives the average price of crude certificates, on the floor of the Bradford Oil Exchange, since March 1, 1879:

	1879	1880	1881	1882	1883	1884
January	. .	110 1-5	95	83	92¾	111⅓
February	. .	103¼	89¼	85¼	101	104⅜
March	86	89	82⅞	80⅞	97½	100⅛
April	78⅜	76⅝	84⅛	78¼	92⅝	94
May	73½	80¼	81½	70	99⅜	85½
June	68⅜	100¼	81	54½	117¼	68¾
July	69⅞	101¼	76½	57⅝	108	63½
August	67¼	90¾	78⅔	58⅔	108⅔	81 1-5
September	69¼	95½	92¼	71⅓	112½	78
October	88⅛	96¾	92¾	93⅝	111⅛	71
November	105⅜	91¼	82⅓	114¾	114 4-5	72½
December	113¼	92⅜	83¾	95¼	114⅓	. . .

RUNS, SHIPMENTS AND STOCKS.

RUNS OR RECEIPTS.

Pipe Line.	November, 1884.	October 1884.
National Transit Co	1,639,164.61	1,719,366.93
Tidewater	202,573.21	221,275.58
Octave Oil Co	2,582.52	2,980.91
Charley Run	. . . . .	. . . . .
Shaffer Run	. . . . .	. . . . .
Franklin (limited)	5,796.20	7,722.99
Cranberry Pipe Line	2,405.95	3,649.82
Total	1,852,522.49	1,954,996.23
Daily average	61,750.74	63,064.39

In the above runs only the oil received by the National Transit Co. directly from the wells, is included.

DELIVERIES OR SHIPMENTS.

Pipe Line.	November, 1884.	October, 1884.
National Transit Co	1,874,330.79	2,246,091.22
Tidewater	189,802.89	244,936.82
Octave Oil Co	2,559.67	2,321.84
Charley Run	. . . . .	. . . . .
Shaffer Run	. . . . .	. . . . .
Franklin (limited)	8,424.84	13.826.59
Cranberry Pipe Line	2,796.76	2,761.76
Total	2,077,914.95	2,509,938.23
Daily average shipments	69,263.83	80,965.75

In the above shipments only the oil delivered to refiners is included.

Daily excess of shipments over runs, November, 1884	7,513.09
Daily excess of shipments over runs, October, 1884	17,901.36
Daily excess of shipments over runs, September, 1884	10,439.21
Daily excess of runs over shipments August, 1884	2,593.82
Daily excess of runs over shipments, July, 1884	10,532.22
Daily excess of runs over shipments, June, 1884	6,443.56
Daily excess of runs over shipments, May, 1884	10,239.88
Daily excess of runs over shipments, April, 1884	11,020.89
Daily excess of runs over shipments, March, 1884	4,144.98
Daily exeess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

Pipe Line.	November 30, 1884.	October 31, 1884.
National Transit Co	36,213,728.26	36,478,855.44
Tidewater	1,518,461.18	1,510,227.30
Octave Oil Co	5,348.28	5,503.83
Charley Run	3,717.00	3,717.00
Shaffer Run	30,636,32	30,636.32
Franklin (limited)	21,337.56	23 966.20
Cranberry Pipe Line	25,193.33	25,584.14
United Pipe Line	38,770.81	45,255.38
Total	37,857,192.74	38,123,745.61

Stocks decreased November, 1884	266,552.87
Stocks decreased October, 1884	616,976.88
Stocks decreased September, 1884	345,281.52
Stocks increased August, 1884	97,092.86
Stocks increased July, 1884	323,063.10
Stocks increased June, 1884	190,320.23
Stocks increased May, 1884	322,981.75
Stocks increased April, 1884	1,945,919.83
Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	386,004.51

	Receipts.	Deliveries.
Daily Average November 1884	61,751	69,264
Daily Average October, 1884	63,064	80.966
Daily Average September, 1884	65,952	76,391
Daily Average August, 1884	66,996	64,402
Daily Average July, 1884	66,702	56,170
Daily Average June, 1884	67,350	60,907
Daily Average May, 1884	66,688	56,448
Daily Average April, 1884	65,794	54,773
Daily Average March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52.737
Daily Average February	65,208	44,352
Daily Average January	65,125	43 813

MACKSBURG IN NOVEMBER.

Operations are continued in a quiet way in the Ohio oil field, and each month witnesses a small increase in its aggregate production. Bradford operators, who were the first to bring the territory before the notice of the Pennsylvania trade are increasing in numbers and gradually getting hold of the country. Boden & Aiken have lately purchased the property of 340 acres, known as the Atkinson and J. S. Gordon farms, lying northeast of the town of Macksburg, subject to one-eighth reserve. At this writing, December 12th, they have five wells drilling on the property.

The territory southeast of Macksburg and south of the Laing well underwent a slight extension by the completion of the Best Bros.' well on the Dutton farm, a short distance east of Elba. Though a small producer it indicates that the territory may extend to the southeast as far as this point. On the Greenberry Stevens farm at the extreme northeastern end of the development, Mills & Mullen found a dry hole. The drill passed through 14 feet of sand, but failed to demonstrate the existence of either gas or oil. During November nine wells were completed, having a new production on the last day of the month of

184 barrels. The production at the present writing is estimated by the producers who are operating in that section at 600 barrels per day, and will be increased in the near future. Below is the list of wells finished in November, with rigs up and building and wells drilling December 1st.

WELLS COMPLETED.

Farm. Operator.	Barrels.
Decker, Decker No. 2	13
Perkins, J. C. Lineman	60
Clinedinst, C. J. Garvey No 1	10
Devoll, Bradley & Lockwood No 1	38
Crawford, Borckman & Laney Bros No 6	15
Schilling, Mills & Austin No 1	18
Coal lands, Ohio Oil Co No 3	25
S W Dutton, Best Bros. No 1	5
G. Stevens, Mills & Mullen No. 2	dry
Wells	9
Production	184
Dry	1

RIGS UP AND BUILDING—WELLS DRILLING.

Farm. Operator.	Depth.
Perkins, J C Lineman, No 2	150
A Stevens, " No 2	1200
" "	rig
Perkins, C J Garvey No 3	800
" "	2 rigs
Gordon, Syndicate No 1	700
Mennow, Syndicate Oil Co No 1	1200
" "	rig
Schilling, John Denman No 1	100
" " No 2	rig
Crawford, Borckman & Laney Bros No 7	1450
" "	rig
Atkinson, Stevens & Longfellow No 2	300
" "	rig bldg
Hupp, Union Oil Co No 1	200
Dyer, F. M. Aiken & Co No 1	100
" "	3 rigs
" "	rig bldg
Atkinson, Clark & Whitney No 2	1100
" " No 3	1150
Clinedinst, J. D. Wolfe No 1	700
Clark, Mills & Mullin No 2	1400
Rice, George Rice No 2	1500
" "	rig
Agler, Decker & Sons	rig
Burton, Spellacy & Clark	rig bldg
Dutton, McManus	rig
Devoll, Bradley & Lockwood	rig
Near Dexter, Unknown	drilling
Gervez, Chapin & Co	rig bldg
Rigs up and building	17
Wells Drilling	16
Total	33

On the first of November there were 9 rigs and 16 wells drilling. The numerals December 1st showed an increase of seven rigs and the same number of drilling wells.

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to Dec. 6, for the years 1883, 1884, were as follows:

	1884. Gallons.	1883. Gallons.
From Boston	7,027,204	4,374,076
Philadelphia	107,515,976	72,545,022
Baltimore	14,151,033	9,820,239
Richmond	....	173,449
Total	128,694,213	86,912,786
From New York	360,684,948	402,265,071
Total exports from United States	489,379,161	489,178,457

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to December 10th, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
GREAT BRITAIN.—London	16,102,800	35,225,167
Liverpool	8,038,837	10,301,271
Bristol	3,821,831	3,335,978
Ireland	5,224,324	5,486,840
Other ports	6,404,237	6,088,538
GERMANY—Bremen	28,828,105	44,577,342
Hamburg	31,125,435	32,275,401
Konigsburg and Stettin	6,768,171	4,766,126
Dantzic	1,102,897	1,110,141
Other Ports	1,372,183	835,570
FRANCE—Marseilles	....	....
Havre	....	....
Norway and Sweden	5,454,902	7,189,009
Russia	188,822	1,539,156
Denmark	7,589,883	8,545,271
Belgium	31,144,065	35,958,106
Holland	15,345,825	13,663,340
Spain	350,960	147,770
Portugal	1,133,434	2,009,420
Gibraltar and Malta	3,227,780	2,097,608
Italy	2,191,084	2,145,446
AUSTRIA.—Trieste, etc	5,239,992	14,638,482
Greece	1,095,010	1,280,410
Turkey in Europe	3,307,180	3,292,551
Turkey in Asia	2,957,865	3,080,742
India	27,496,000	15,841,990
China, Japan, etc	22,509,550	24,336,810
East Indies	27,641,780	30,381,650
AFRICA.—Alexandria, etc. E	3,483,440	2,813,050
Canary Islands	167,379	153,849
Other Ports	4,500,635	4,745,629
Australia	2,607,196	2,246,846
New Zealand	858,451	613,900
Sandwich Islands	204,080	202,500
SOUTH AMERICA.—Brazil	5,622,111	5,725,974
Argentine Confederation	5,818,250	3,670,550
Chili and Peru	915,014	1,380,800
U. S. Columbia	424,450	309,956
Venezuela	663,106	622,604
Other Ports	66,101	117,461
Central America	305,794	223,938
Mexico	1,146,490	1,275,713
British North American Colonies	1,285,518	1,168,614
Cuba	401,496	225,936
British West Indies and Br. Guiana	1,476,399	1,528,964
Other West Indies	1,169,087	869,517
Total . . . . . Galls.	296,878,049	337,845,936

CRUDE.

	1884.	1883.
FRANCE.—Havre	8,493,244	10,086,215
Marseilles	4,378,892	3,337,485
Bordeaux	2,226,647	2,224,280
Dunkirk	6,215,915	7,189,449
Other Ports	9,626,281	7,917,431
Antwerp	....	....
Bremen	425,850	753,616
Norway and Sweden	....	62,374
Spain	14,270,307	11,988,161
Cuba	2,857,852	1,982,803
Other Ports	6,070,624	2,193,471
Total . . . . . Galls.	54,565,612	47,735,285

NAPHTHA.

	1884.	1883.
Great Britain	4,101,151	5,615,859
France	3,414,282	5,637,097
Germany	521,780	1,668,038
Other Europe	983,201	1,665,163
Various Ports	220,873	98,293
Total . . . . . Galls.	9,241,287	14,684,450

RESIDUUM.

	1884.	1883.
To all Ports	3,816,795	6,080,797

	Gallons.
Total Refined since January 1, actual shipments	299,847,041
do do do do crude equivalent	399,796,055
do Crude do do actual shipments	54,964,583
Grand Total Crude and Crude equivalent . . . . galls.	451,760,638
Same time, 1883	502,422,021

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, December 10th, 1884:

PORTS.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	29	36	10	3	1	79
Philadelphia	16	17	14	6	1	54
Baltimore	5	1	0	0	0	6
Boston	1	1	0	0	0	2
Total Dec. 10	51	55	24	9	2	141
Total Nov. 8	78	57	28	4	5	172
Difference	27	2	4	5	3	31

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

PUBLISHED MONTHLY BY

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BRADFORD, PA.

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THE PRODUCING REGION.

ALLEGANY FIELD.

The work of cleaning out and of shooting old wells will be practically stopped with the arrival of winter. With this source of increase or maintenance in the yield of old wells cut off and the drill at new wells stopped, the production during the cold season should decline. The daily average pipe line runs during November were 8,642 barrels, a reduction from the October numerals of 160 barrels. The work of drilling is reduced to a minimum. Eleven wells were finished in November, having a new production on the last day of the month of 49 barrels. There were four new rigs up and building, sixty which had been standing for 30 days or longer, and eleven wells drilling, making a total of seventy-five. The count at the close of the previous month showed an aggregate of seventy-seven. The test wells drilled near and far beyond the limits of the district came in dry. Carroll & Co.'s venture in the vicinity of Towanda, Pa., was a failure. The territory of the Allegany field which remains to be perforated is exceedingly light, and when operated can not influence the production to an appreciable extent.

BRADFORD FIELD.

There is but little that is new to note concerning the drift of developments in the Bradford district. Some activity is observed at the Cole Creek front, where the drilling of one well on the corner of a lot caused three others to be sunk on adjacent tracts. The large block of partially drilled territory owned by John McKeown, passed into the hands of the Associated Producers during November. This organization acting in unison with two other large firms, will be able to maintain almost a shut down in this section for an indefinite period. On the intervening ground between the Bradford territory and the pools of Warren county one dry hole was discovered. Its derrick is pitched in the wilds of Sugar Run. Ten wells were finished in the Bradford district in November, with a new production on the last day of the month of 231 barrels. The four wells which afford nearly all of this out-put are situated in the Cole Creek woods. The new operations in the field are reduced to a low ebb. Only eight new rigs were found in the various sections on the first of the month and nine wells were drilling. The daily average pipe line runs in November were 29,552 barrels, the smallest average that has been reached since the field passed the flood of its yield.

WARREN AND FOREST.

Of the twenty-seven wells completed in the middle field during November, fifteen were dry. The twelve remaining wells are estimated to have had a daily output of seventy-six barrels on the first of December. The dry holes were mostly scattered wells of the wildcat variety. The two counties that have furnished the oil trade with the great gusher pools of Cherry Grove, Cooper, Henry's Mills, Balltown and Wardwell, are in turn overshadowed by the new developments in old Butler. The Cooper district furnishes but one completed well, that of Horton, Crary & Co. on lot 370, which was a failure. It is located to the northeast of Henry's Mills, and helps to define the extreme northern limits of the Cooper development. In the Balltown pool L. Krear & Co. found a large gas well near the southeast corner of lot 741, in an effort to discover a prolongation of the spur from the Emery & Agnew wells on 3195.

At Wardwell operations have come to a decided stand-still. The last drilling well was completed in November, and at the present time nothing in the way of new work is being projected. The pool is pretty thoroughly drained, and affords only limited prospects for small wells in the southwest. Two experiments are under way north of the Stoneham development, on the theory of a connection between that district and the Wardwell field.

The production of the Wardwell pool, as shown by the pipe line runs, up to December 1st, has been as follows:

Month.	Barrels.
April,	14,263
May,	31,451
June,	61,260
July	132,595
August	200,985
September	121,683
October	68,256
November	40,376
Total	670,869

New operations in the middle field show an increase in the Clarendon and Tiona districts.

Southwest of Tiona village a considerable area of five barrel territory has been leased, and operators are busy developing an extension to the old district, which, though very cheaply drilled, affords only the smallest returns on a seventy-five cent market. The seat of the activity is confined to lots 202, 203, 204 and 241. Few of the wells yet drilled in this locality will average ten barrels per diem for the first thirty days.

On the first of the month there were 21 drilling wells and 9 new rigs in the middle field. The first of November showed 24 drilling wells and 11 new rigs.

Warren and Forest counties continue to furnish locations for the active wildcatter. November failed to record a single one that can be considered as even moderately successful. On the outskirts of Kinzua Village, the Rock Oil Co., drilled a dusty land-mark north and west of the village. Hunter & Sherman on Warrant 5565, Glade township were rewarded with a good gas well, in their search for the Wardwell sand. Between the Dew Drop or Kinzua Village development and the Tiona district, Nickel, Munn & Co. have made an unsatisfactory test. It is located on the northeastern part of lot 70 in Kinzua township. About three miles to the east of the old "Hoodoo" well, on Warrant 3662 in Elk county, Ed. McDermott & Co. are credited with a failure. Hughes & Murphy were near the sand with an experiment on Warrant 3667 Warren county, which has since been pronounced dry.

THE LOWER COUNTRY.

This division of the field still maintains its position of paramount importance before the trade, and is likely to do so for some time. Though the greater part of the wide territory included under this general head is as inactive and quiescent as Allegany. Venango county presents a very limited list of operations, consisting of scattered wells from Shamburg and Blood Hill to Emlenton, and the adjacent pasture stretches of Scrubgrass township. Clarion county is clear out of the race, operations in that neck o' woods being confined to a semi-wildcat located between the "sucker-rod" terminals of the belt at Shippenville and the partly condemned wildcat territory around Tylersburg.

Armstrong county has one drilling well, located for a ten barrel affair, in the immediate vicinity of the old Armstrong Run development. Allegheny county, with the exception of the natural gas ventures about Pittsburgh, has one well in a semi-mystified condition, just below the Butler county line, and in the region proximate to the Thorne Hill venture, and a hoary failure of the very early "seventies."

Butler county is the seat of war, and Thorn Creek is the position of the contending armies. Skirmishing parties are at Martinsburg, Great Leather, St. Joe, Butler, Herman's Station and elsewhere, but Thorn Creek has the eye of the trade, and will keep it until the winter has well worn away and old Sol shall be again approaching or crossing the vernal equinox. It is a great field. Less than 125 acres is producing 5,000 barrels of oil daily, and has already yielded half a million barrels. Cherry Grove and Bradford wells pale into insignificance beside this crude torrent. Sixteen wells have poured out 400,000 barrels of petroleum in three and a half months, or a little more than 100 days, and are still pouring out 5,000 barrels a day. History affords no parallel in this country and perhaps never will again.

At this writing the end of all this is shrouded in impenetrable mystery. The McBride mystery is drilling in good sand, or fair average sand, and has plenty of it, which may mean another of the wonderful gushers, or something entirely different. But the well is half a mile in advance, and the mere fact that it has found the sand, and plenty of it, is discouraging. Where there is forty feet of good oil sand there lurks danger; if not in one spot, then in another. The Phillips & Simpson well on the Kennedy farm, another advance location, 110 rods from developments, has just begun flowing at a depth of 30 feet in the sand, but has not yet demonstrated its final capacity, though indications favor a light well. Between this well and the McBride the distance is nearly 140 rods, and territory between these tests is theoretically more favorably located than at either extremity. Time alone can give the results, aided by the drill. The laws applying to existing developed fields are useless in this territory as criterions to go by, as the new district has already defied almost every recognized law of the older fields. The man who first grasps the laws of the new field will strike a rich "pay streak," indeed.

The Straight Run Company's wildcat, three miles southwest of Thorn Creek and half a mile west of Brownsdale, is a duster, failing to find the sand, as was the case with the Union Oil Company's venture, half a mile south, two years ago. Reed & Co. will complete a wildcat two and a half miles southwest of the old Baldridge pool this month, and Painter Bros. may complete their test in the same section. Wildcats are drilling north, northeast, east, southeast and south of the gusher pool, which, when completed, will give an idea of the extent of the prolific area.

NOVEMBER OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN NOVEMBER, 1884.

Allegany Field.

Lot. Owner.	Barrels.
Scio, lot 2, Pennell Bros, No 4	6
Alma, lot 38, Perrin & Young, No 15	10
do lot 66, Thos. Puller	5
Wirt, Straight farm, National Transit Co, (gas well)	dry
Bolivar, lot 15, Kelly & McMurry	10
" lot 15, John Benninger	10
Wetherby, Empire Gas Co	6
Clarksville lot, Werthman & Fletcher	2
" Gezman, Faught & Co.,	dry
" Lot 12, Cuba Gas Co	gas
Miscellaneous, Towanda, C. M. Carroll,	dry

Wells	11
Production	49
Dry	4

Bradford Field.

E & W Branches, Sugar Run. W H D Chapin	dry
" Hinchey, McMurry Bros. No 5	6
Foster Brook, Vandergrift pur., Letson	5
Four Mile, Brown & Harriett	5
" Buzzard, Waco Oil Co	10
Indian Creek, Keys, Keys, est.,	5
Cole Creek, 593, T. J. Melvin	50
" 592, Union Oil Co	50
" 580, Associated Producers	50
" 581, "	50

Wells	10
Production	231
Dry	1

Warren and Forest.

Glade and other Towns.

North Warren, Franson, Fredericks	dry
Pratt lot, Kinzua Village. Rock Oil Co	dry
5564, Glade, Johnson & Co	dry
5565, Glade, Hunter & Sherman	gas
Reighe, S. M. Coggswell & Co	3
Clark, " No 1	5
Lacy, W. H. Bradley, No 3	5
Rogers, Wesley Chambers No 2	10

Wells completed	8
Production	23
Dry	4

Clarendon.

463, A. Wolf & Co No 1	5
35, Bell, No 2	5
526, Emerson & Co No 3	6
668, Holman & Co	dry

Wells completed	4
Production	16
Dry	1

Tiona.

70, Nickel, Munn & Co	dry
109, J R. Kuhn & Co, No 1	8
109, Allen O'Donnell & Co, No 1	8
204, Wheeler, Bovaird & Seyfang No 5	6
241, F. W. Winger, No 1	8
241, " No 2	7

Wells completed	6
Production	37
Dry	1

Cooper District.

Lot 370, Horton, Crary & Co No 2	dry

Wells completed	1
Dry	1

Balltown.

Lot 741, Cherry Grove, L. Kreear	gas

Wells completed	1
Dry	1

Miscellaneous.

Warren, Pleasant twp, lot 486, Campbell & Co	dry
" Conewango, (Murphy farm) Brown & Co	dry
" 5229, Homer & Campbell	dry
Tidioute Run, Armor & Co	dry
Youngsville, Davis farm, Branch & Co	dry
Warren, 5207, Tidioute parties (Dr. Nickel)	dry
Elk Co, 3662, McDermott & Co	dry

Wells completed	7
Dry	7

Lower Country.

Venango.

McCalmont, S P McCalmont No 4	10
Flinchpaugh, A. P. Dale	dry
Gas City, Unknown	20

Vicinity Emlenton.

A. M. Crawford, Sherry & Knight	16
McCullough, W. J. Weaver No 3	10
Jew Tract, Jamison & Flower No 2	10
D. M, Crawford, Daniels & Co No 3	6
Black, Galbraith & Sherwood	8

Wells	8
Production	80
Dry	1

Clarion.

C. Lobaugh, Klingensmith (Callenburg)	dry
Loll, Jacob Hahn, (Tylersburg)	dry

Wells	2
Dry	2

Butler and Armstrong.

Morrow, German Oil Co	10
Turney, R. Jennings	8
Reep, Westerman & Co	40
Kesselman, Reep & Sutton	50
Mulligan, Showalter Bros, & Hartman	2
Witt do	20
Gormaly, Gilbert & Vanderlin (Murrinsville)	3

Wells	7
Production	133

Baldridge.

Wallace, Fisher Bros & Co No 9	8
do do No 11	40
do do No 12	20
do do No 13	15
do do No 14	50
Marshall, do No 1	100
do do No 2	dry
do do No 3	1200
do do No 6	675
do Greenlee & Co No 1	900
do Connors & Fishell No 2	1200
do Gibson & Co No 1	stopped
do do No 2	900
Bartley, Christie Bros No 2	10
do do No 4	50
do Phillips Bros No 4	10
do do No 5	960
Dodds, do No 1	30
Henderson, M. K. McMullin & Co	dry
Brown, J McTamany & Co	dry
Weber, P Schmick	40

Wells	21
Production	6208
Dry	3

DRILLING WELLS, RIGS UP AND BUILDING DEC. 1.

Allegany Field.

Scio.

Lot. Owner.	Depth.
2, Coast Oil Co No 31 (old)	rig
3, Coyle (old)	rig
4, McEnroe & Elliott No 4	300
4, Breckenridge (old)	rig
11, Thompson & Vesey No 5	drilling
11, Lowcomer & Turner (old)	rig
12, Allen & Morse (old)	rig
12, Griffin & Co No 7 (old)	rig
12, do No 10 (old)	rig
50, The Union Oil Co No 8 (old)	rig
50, do do No 9 (old)	rig
L Morton farm, A J Applebee No 3 (old)	rig
1, Pickering & Smith (foundation laid) (old)	rig b'dg

New rigs	0
Old rigs	11
Drilling	2
Total	13

Alma.

1, Phillips Bros No 14 (shut down) (old)	300
1, do No 15 (old)	rig
23, Vance & Horton (old)	3 rigs
24, New Milford Oil Co old)	2 rigs
24, W F Jones (old)	rig
24, S. G. Bayne, No 5 (old)	rig
38, Perrin & Young No 15	rig bldg
51, Sawyer & Co (old)	rig
55, W P Decker	rig
55, Wanemaker & Co	drilling
66, Thos Puler	drilling
88, Duke & Co (old)	rig
142, Dean & Smith No 5 (old)	rig

New rigs	1
Old rigs	13
Wells drilling	2
Total	16

Wirt.

1, George McCoy No 3	1200
1, Early Bros	rig
1, Dewes & Donnell	300
12, Smith & Co	rig
14, Lester & Co. (old)	rig
30, John Moran	sand
33, Miner, Wellman & Fuller (old)	rig
43, (Wilcox farm) Allegany Gas Co	500
52, Dyer Oil Co	rig
55, Wanamaker & Co	drilling
61, Muldoon Oil Co (old)	rig
Wheeler, McKenzie & Co (old)	rig

New rigs	3
Old rigs	4
Wells drilling	5
Total	12

Bolivar.

7, W & J Duke No 16 (old)	rig
7, Coast Oil Co No 20 (old)	rig
7, do No 42 (old)	rig
7, do No 45 (old)	rig
15, Fay (old)	rig
15, Sawyer & Co (old)	rig
23, F C Streeter & Co No 7 (old)	rig
23, Irvin & Morgan No 5 (old)	rig
30, Fritz & Lowry No 8 (old)	rig
30, do do No 10 (old)	rig
31, Smith & Co No 10 (old)	rig
Wetherby, Empire Gas Co (old)	rig
42, Parker	800

New rigs	0
Old rigs	12
Drilling	1
Total	13

Clarksville.

9, Heuston & Brecht No 4 (old)	rig
9, Merritt (old)	rig
Gesman, Wasson & Madison (old)	rig
Zimmer, Clover & Co	drilling

New rigs	0
Old rigs	3
Wells drilling	1
Total	4

Genesee.

8, I Willets (to the top of sand	drilling
8, do (to the top of sand)	drilling
14, Merwin (old)	rig
21, Empire Gas Co No 3 (old)	rig
22, I Willets No 13 (old)	rig
22, do No 14 (old)	rig
22, do No 15 (old)	rig
22, do (old)	rig
23, Hughes & Coughlin (old)	rig
23, Emery Oil Co No 16 (old)	rig
23, do do No 17 (old)	rig
Champlain, Emery Oil Co No 8 (old)	rig
29, William Cranston (old)	rig
31, H L McMullan & Co (old)	rig
38, S E Young (old)	rig
38, Empire Gas Co (old)	rig

New rigs	0
Old rigs and wells shut down	16
Drilling	0
Total	16

Miscellaneous.

Gains, Peck & Tait (old)	rig

New rigs	0
Old rigs	1
Wells drilling	0
Total	1

Bradford Field.

East and West Branches.

Paton, McClure & Co (old)	rig
Clark, McCray Bros (old)	rig
Willis, do No 29 (shut down)	550
Glass, Barnsdall Bros (old)	rig
Dent, P C L & P Co No 64 (old)	rig
do do do No 65 (old)	rig
do Whitney & Wheeler No 40 (old)	rig
Mill lot, Whitney & Wheeler No 9 (old)	rig
Paul, Bayne, Fuller & Melvin No 5 (old)	rig
Wilson, West Branch Oil Co No 11 (old)	rig
Cary, Duncan No 4 (old)	rig
Mack, Fisher Brothers No 19 (old)	rig
Bowen lands, Phillips & Co	rig
Hinchey, McMurray Bros & Co No 6	rig
Prain, Brinton & Dale (old)	rig bldg
Buchanan, Snyder	200

Quintuple.

25, E Strong & Co (old)	rig
44, J W Humphrey (old)	rig
138, Campbell & Yonkins	100
220, Clark, Stearns & Co (old)	rig

New rigs	1
Old rigs and shut down	17
Drilling	2
Total	20

Kendall Creek.

Melvin, P C L & P Co No 85 (old) . . rig
do do do No 86 (old) . . rig
do do do No 87 (old) . . rig
Borden, Urquhart & Lavens (old) . . rig
Norton, Dan Clark No 3 (old) . . . . rig
do do do No 4 (old). . . . . rig
Irons, Carter . . . . . drilling
Dodge, Dodge & Carter (old) . . . . . rig
Sawyer City, A. W. Boyd . . . . . rig bldg
Willets, I Willets (old). . . . . rig

New rigs 1
Old rigs 8
Drilling 1
—
Total 10

Foster Brook.

E T Co, Boyne, Penny & Coleman No 11 (old) rig
do F L Blackmarr & Post No 5(old) rig
do R W Evans (old) . . . . . rig
C B & H, Watson Oil Co No 33 (old) . rig
do do do No 34 (old) . rig
do Juter & Yager (old) . . . . . rig
do P W Bulger, (fishing) . . . . sand
Evans purchase, Gibson & Sanderson, 350

New rigs 0
Old rigs 6
Well drilling 2
—
Total 8

Four Mile.

Van Campen Wm M Brown 900
do Merrill & Perrin (old) . . rig
do Geo Van Campen & Sons No 21 (old) . . . . . rig
do Geo Van Campen & Sons No 22 (old) . . . . . rig
do Cleveland Oil Co No 5 (old) rig
do do do No 6 (old) rig
do Wm Doe No 5 900
do do No 6 . . . . . rig
Waters, Griffin & Howard No 2 (old) . rig
C B & H, James Smith (old) . . . . . rig
Widow Carrol, Malloch 800
Stevens, Burns Bros 800
do Burns Bros (old) . . . . . rig

New rigs 1
Old rigs 8
Drilling. 4
—
Total. 13

Indian Creek.

Barse, Union Oil Co No 36 (old) . . . . rig
North Branch, J D Downing & Co (old) 2 rigs
Keating, Forest Oil Co No 47 (old) . . rig
Hamlin, Miller & Odell No 4 (old) . . rig
Zimmer, Shear Bros (old) . . . . . 2 rigs
Morse, Morse & Brown (old) . . . . . rig
Miles Loop, Union Oil Co No 25 (old) rig

New rigs 0
Old rigs 9
Drilling 0
—
Total 9

Cole Creek.

Rew, Capt E Frawley (old) . . . . . rig
Bingham, lot 537 Union Oil Co No 31 (old) rig
do lot 550 do No 32 (old) rig
do lot 495 do No 3 (old) rig
do lot 579 do No 11 rig
do lot 594 Bayne & Fuller . . . rig
do lot 594 do . . . rig bldg
do —— Rose & Byrom . . . . rig
do lot 580 Associated Producers rig
do lot 580 do (old) rig

New rigs 5
Old rigs 5
Drilling 0
—
Total 10

Kinzua.

Bingham, Union Oil Co No 56 (old) . . rig
do Emery Oil Co No 40 (old) . . rig

Kinzua Village.

U O Co, Dr E A Van Scoy (old) . . . rig

New rigs 0
Old rigs 3
Drilling 0
—
Total 3

Warren and Forest.

Glade and Other Towns.

North Warren, Rhumor, Rhumor & Co (salt water) 515
Fuller farm, Kinzua, Jas Parker & Co.. 300
5542, (Elk twp) Schnur & Robbins (old) rig
Clark, S M Cogswell & Co, No 2 . . rig
Lacy, Brown Brothers . . . . . rig
Cobham, Union Oil Co No 13 (old) . . rig
Foster, Wesley Chambers No 1 (old) . rig
Kirwin, Clark & Foster (old) . . . . . rig
Copeland, Wm Pagett & Co (old) . . . rig
Rogers, Barnsdall Brothers No 14 . . . rig
do do No 15 (old) rig
do do No 16 (old) rig

New rigs 2
Old rigs 8
Drilling 2
—
Total 12

Clarendon.

463, A Wolf & Co No 2 . . . . . rig
463, Miller, Peck & Thompson No 1 . . 600
464, J Smith & Son No 7 450
54, D Beatty & Son No 36 (old) . . . rig
78. do do (old) . . . . . 2 rigs
466, Stoneham Oil Co No 3 (old) . . . . rig
466, D Riddlesperger (old) . . . . . rig
464, Columbia Oil Co No 17 (old) . . . rig
106, Golden & Co (old) . . . . . rig
108, C H Filkins (old) . . . . . rig
495, W W Ballard No 4 (old) . . . . . rig
526, Emerson & Co No 4 . . . . . rig bldg
527, Goal Bros No 2 (old) . . . . . rig
527, do No 3 (old) . . . . . rig
527, do No 4 (old) . . . . . rig
557, R E Townsend No 5 750
557, E O'Donnell & Co No 2 900
561, F H Rockwell & Co No 13 (old) . rig
583, do No 14 (old) . rig

New rigs , ... 2
Old rigs 14
Drilling. 4
—
Total 20

Tionà.

75, Fertig & Henne (shut down) . . . sand
59, do (shut down) . . . sand
104, Armor & Co No 3 . . . . . drilling
109. J S Patterson No 31 (old) . . . . . rig
109, Schonblom & Townsend No 8 (old) rig
110, Fertig & Henne (old) . . . . . 2 rigs
109, Allen, O'Donnell & Co No 2 . . . 300
161, Helm & Mealey (old) . . . . . rig
161, do . . . . . drilling
165, Whitehill & Co No 2 (old) . . . . rig
203, Markham & Co No 1 . . . . . drilling
204, Emerson & Farnsworth No 7 . . . rig
204, Sage, Kelly & Welsh 100
204, Spence & Morrison, No 1 300
204, Cook & Co 100
204, Wheeler, Bovaird & Seyfang No 6, drilling
204, do No 7, rig
204, Mandell Oil Co No 1 300
241, F W Winger, No 3 . . . . . rig
241, Horton, Crary & Co, No 1 300

New rigs 4
Old rigs and shut down. 8
Drilling 9
—
Total 21

Cooper District.

Lot 438, Shank & Emery No 23 (old) . . rig

New rigs 0
Old rigs 1
Drilling 0
—
Total 1

Balltown.

3194, Porcupine Oil Co No 21 (old) . . rig
3195, Emery, Agnew & Co No 6 (old). . rig
3195, do do No 7 (old) . rig
4821, Balltown Oil Co No 24 (old) . . . rig
4792, Howe Oil Co No 16 (old) . . . . rig
4792, do do No 17 (old) . . . . rig
5236, May, Kelly & Grandin No 28 (shut down) sand
5236, do do No 29(old) rig
3195, McMullen & Co . . . . . drilling

New rigs 0
Old rigs. 8
Drilling 1
—
Total 9

Miscellaneous.

Forest, 3667, Murphy, Hughes & Co, near sand
do West Hickory, Wolcott & Co . drilling
do 3164, J M Arters . . . . . sand
Warren Deerfield twp, (Conklin Run) W W Hague . . rig
do Spring Creek twp, lot 316, Windsor & Co (shut down) . 1000
Youngsville, McKinney farm, Broken-straw twp., Calhoun & Co, 200
Limestone, 5245, Barnum & Co . . . . sand

New rigs 1
Old rigs 1
Drilling 5
—
Total 7

Lower Country

Venango.

Diamond, Manning & Darr 500
Galbreath, Cramer & Co. 600
McCalmont, S P McCalmont No 5 . . 200
do do No 6(old) rig
do do No 7(old) rig
Kaufman, A P Dale (old). . . . . rig

Vicinity Emlenton.

S. P McCalmont, J Wallrabenstein . . rig
A M Crawford, Sherry & Knight . . . rig
Rowley, Rowley & Taylor . . . . . sand
H. Leslie, T Dutton 100
Robinson, Gorman & Co, (old) . . . . rig

New Rigs 2
Old Rigs 4
Wells drilling 5
—
Total 11

Butler and Armstrong.

Kesselman, Reep & Sutton No 4 . . . 1400
Ritzert, Showalter Bros. & Hartman . sand
Witt, do . rig bldg
Mulligan, H McGuire & Co, ... 1200
Minster, Phillips Bros. No 4 500
P Kelly, J B Wasson 1000
McCrea, Steele & Ward . . . . . sand
Rider, M Bowers 1200
McJunkiin, Fisher Bros & Co . . . . . rig
Pierce, Showalter Bros. & Hartman . 700
Lieblar, C A Eliason . . . . . rig

Baldridge.

Wallace, Fisher Bros & Co., No 15 . . 400
do do No 16 . . rig
Marshall do No 4 . . 600
do do No 5 . . rig
do do No 7 . . 500
do do No 8 . . 1300
do Armstrong, Boyd&Semple No 3 700
do Boyd & Co 1200
do Greenlee & Co No 2 . . . . drilling
do Lappe & Co No 1 500
do do No 2 . . . . . rig
Bartley, Christie Bros No 3 1300
do do No 5 500
do do No 6 1300
do do No 7 600
do do No 8 500
do Phillips Bros No 6 . . . . . sand
do do No 7 1400
do do No 8 1200
do do No 9 1000
do do No 10 800
Doods do No 2 1450
do do No 3 1000
do do No 4 400
do do No 5 . . . . . rig
Patterson, do No 1 . . . . . sand
McCandless do No 2 (fishing) . 650
do do No 3 . . . . . rig
do do No 4 . . . . . rig
McCormick do . . . . . sand
Kennedy, Phillips Bros & Simpson (fishing) sand
Henderson, Johnson Bros, No 3 (old) . rig
Scully, McBride & Campbell . . . . . sand
Fisher, Baldridge Oil Co (old) . . . . rig
Kennedy, Babbitt & Co 1100
Douthett, Straight Run Oil Co 1350
Ribolds, Painter Bros 700
S Critchlow, Reed & Co 1100
McLaughlin, Reep & Sutton . . . . . rig bldg
Brown, do (abandoned)
Hillman, Pittsburgh Oil Co (Allegheny Co) 1650

New Rigs 10
Old Rigs 2
Wells drilling 39
—
Total 51

STOCKS IN FOREIGN PORTS NOVEMBER 22, 1884.

	Stocks W'k end'g Nov. 22.		Stocks Afloat W'k end'g Nov. 22.		W'k end'g Nov. 22. Loading.		Grand Total Stocks Afloat & Loading.		Receipts. From July 1.		Shipments From July 1.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London . . .	407,499	162,754	59,574	19,409	24,600	19,000	491,673	201,163	268,856	182,572	234,717	249,991
Trieste	4,073	24,102	52,357	16,737	8,000	. . .	64,430	40,839	76,894	45,417	91,946	65,320
Bremen	872,287	607,052	36,702	56,663	70,000	28,000	978,989	691,715	345,553	243,241	367,893	432,770
Hamburg	190,817	164,375	11,446	47,243	10,500	22,500	212,763	234,118	419,440	579,898	561,730	588,068
Antwerp	277,685	161,631	49,781	79,948	24,000	70,000	351,466	311.579	461,022	502,407	393,715	466,746
Rotterdam	69,768	42,580	7,766	34,011	5,000	4,500	82,534	81,091	93,805	85,552	99,173	105,344
Amsterdam	45,568	29,176	6,644	25,989	5,000	8,200	57,212	63,365	123,880	98,204	115,150	112,038
Stettin	73,749	69,068	13,198	7,772	. . . .	. . .	86,947	76,840	153,755	182,866	148,347	155,416
Danzig	23,935	26,580	. . .	. . . .	. . . .	. . .	23,935	26,580	51,302	55,518	39,052	37,397
Total	1,553,809	1,100,462	125,537	251,626	114,500	133,200	1,793,846	1,485, 88	1 648,757	1,747,686	1,7 ,060	1 ,779

	1881.	1882.	1883.	1884.
Total stocks exclusive Trieste	1,060,789	1,603,866	1,961,308	1,263,216
Total afloat, exclusive Trieste	310,329	289,279	185,111	271,035
Total loading, exclusive Danzig, London and Trieste	270,300	180,500	139,100	152,200
Total	1,641,418	2,073,645	2,285,519	1,686,451
Afloat and loading for direct Continental Ports	. . . .	. . . .	. . . .	. . .
" " " Baltic Sea, exclusive Stettin and Danzig	. . . .	. . . .	. . . .	18,200
" " " English harbors, exclusive London	130,000	85,900	164,100	104,800
Grand Total	1,771,418	2,159,545	2,449,619	1,809,451

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	Nov. 22, 1884. Barrels.	Oct. 25, 1884. Barrels.
London	201,163	232,611
Trieste	40,839	65,585
Seven Continental Ports	1,485,288	1,770,157
Total Stocks afloat and ashore	1,727,290	2,068,353
Decrease in Stocks since October 25 . . .	341,063	

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

CRUDE QUOTATIONS FOR NOVEMBER, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Bradford. Highest.	Bradford. Lowest.	Bradford. Closed.	Oil City. Opened.	Oil City. Highest.	Oil City. Lowest.	Oil City. Closed.	New York. Opened.	New York. Highest.	New York. Lowest.	New York. Closed.	Pittsburgh. Opened.	Pittsburgh. Highest.	Pittsburgh. Lowest.	Pittsburgh. Closed.
S	1	71¾	73½	69⅝	72⅝	71½	73⅜	69⅝	72⅞	71⅝	73¼	69¾	72¾	71⅝	73½	69¾	73
M	3	72	73	71⅝	72	72	73⅛	71½	72⅛	72¼	73⅛	71⅝	72¼	72	73	71¾	72¼
T	4	72	75⅝	72	74⅞	72¼	75⅜	72¼	74¾	. .	. .	. .	. .	72⅛	75	72⅛	74⅞
W	5	75	75	73⅝	73¾	75	75¼	73⅝	74	74	75	73½	73¾	. .	. .	. .	. .
T	6	74¼	74⅞	71⅜	73⅜	74½	74½	71½	73¼	74½	74½	71½	73½	74¼	74¼	71½	73½
F	7	73⅛	74¼	72¾	73¼	73	74½	72⅞	73¼	73⅞	74	72¾	73¼	72½	74	72½	73⅜
S	8	73	74	72¾	73⅛	73½	74⅛	72¾	73⅛	73⅞	74	72⅞	73	73½	74	72⅞	73
M	10	73¼	73⅜	71¾	72⅞	73	73⅝	71¾	72⅞	72¼	73⅜	71⅞	73⅛	73	73½	71⅞	72⅞
T	11	73¼	73⅞	72	72¾	73½	74⅛	71⅞	72¾	73⅛	73⅞	72⅛	72⅝	73½	73¾	72⅛	72⅞
W	12	73⅜	73⅜	72	72¾	72⅞	73⅞	72⅛	72¾	72¾	73⅞	72¼	72⅞	72¾	73⅜	72⅛	72¾
T	13	71½	72½	68⅝	68⅝	71⅜	72½	69	69	71⅞	72¾	68¾	68¾	71	72⅝	69	69
F	14	67¾	70½	67⅝	69	68	70½	67½	69	68	70⅛	67	69⅛	68	70½	67⅞	69
S	15	68½	70⅛	68	70	68	70¼	68	70	67¾	70	67¾	70	68	70	68	70
M	17	71	73⅝	71	73	71½	73½	71	72⅞	70¾	73½	70¾	72⅞	70½	73½	70½	72⅞
T	18	73½	73⅝	70⅛	70⅞	73½	74	70	70⅞	73	73¾	70⅛	70¾	73¾	73¾	70	70⅝
W	19	70⅝	72⅛	70⅝	71	70½	72⅛	70½	71	71	72	70⅞	71¼	71	72⅛	70⅞	71⅛
T	20	71½	72⅜	71	71¾	71¼	72½	71⅛	71⅞	71¼	72½	71⅛	71¾	71¼	72¼	71	71¾
F	21	71½	72¼	71¼	72¼	71½	72½	71¼	72½	71⅜	72¼	71¼	72⅛	71½	72¼	71⅜	72⅛
S	22	72⅞	73	71¾	72	72½	72⅝	71⅛	72¼	73	73	71⅞	72	72⅝	72⅞	71⅞	72
M	24	72⅜	72½	71⅞	72⅛	72⅜	72¾	72⅛	72⅜	72½	72¾	71⅞	72⅛	72½	72⅝	72	72¼
T	25	72⅛	72¼	70⅞	71¾	71⅞	72⅛	71	72	72¼	72¾	71	71¾	72	72⅛	71	71⅞
W	26	72⅜	73	71⅞	73	72¼	73	72	72⅞	72¼	73	71⅞	72¾	72⅜	72⅞	72	72¾
T	27		HOLIDAY.				HOLIDAY.				HOLIDAY.				HOLIDAY.		
F	28	74	77¼	73⅜	77⅛	73½	77½	73½	77½	73⅝	77	73⅜	77	73	77⅜	73	77⅜
S	29	78½	79¾	77¾	78⅞	78	80	77½	78¾	78	79⅞	77⅝	78⅝	78	80	77⅝	78⅝

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, OCTOBER, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., DECEMBER 8, 1884.

CUSTOMS DISTRICT.	MINERAL CRUDE. Gallons.	MINERAL CRUDE. Dollars.	NAPHTHAS. Gallons.	NAPHTHAS. Dollars.	ILLUMINATING. Gallons.	ILLUMINATING. Dollars.	LUBRICATING AND PARAFFINE OIL. Gallons.	LUBRICATING AND PARAFFINE OIL. Dollars.	RESIDUUM. Gallons.	RESIDUUM. Dollars.	TOTAL. Gallons.	TOTAL. Dollars.
Boston & Charlestown, Mass	. . . . .	. . . .	200	60	821,038	88,727	10,815	2,729	. . . . .	. . . .	832,053	91,516
New York, N. Y., . . .	5,824,844	431,195	1,107,029	99,628	30,745,499	2,729,205	814,681	164,222	339,906	19,441	38,831,959	3,443,691
Philadelphia, Pa., . . .	3,631,868	259,810	402,386	29,485	13,767,123	1,131,146	35,552	5,885	190,302	8,942	18,027,231	1,435,268
Baltimore, Md., ...	. . . . .	. . . .	. . . . .	. . . .	1,794,121	138,404	497	375	443,268	20,952	2,237,886	159,731
San Francisco, Cal., . .	. . . . .	. . . .	7,410	1,881	15,280	3,313	460	304	. . . . .	. . . .	23,150	5,498
All other districts . . .	. . . . .	. . . .	11,655	1,447	269,508	30,904	1,225	598	. . . . .	. . . .	282,388	32,949
Total for Oct., 1884 .	9,456,712	691,005	1,528,680	132,501	47,412,569	4,121,699	863,230	174,113	973,476	49,335	60,234,667	5,168,653
Total for Oct., 1883 .	7,194,244	538,602	2,580,553	171,859	37,387,619	3,323,400	826,742	184,034	337,092	15,315	48,326,250	4,233,210
Total for 10 months ended Oct. 31, 1884 . .	61,934,854	4 840,922	10,099,465	855,839	356,379,235	32,782,428	9,581,874	1 962,880	4,699,590	294,557	444,695,018	40,736,626
Total for 10 months ended Oct. 31, 1883 . .	47,765,255	3 558,206	14,119,556	989,748	372,892,276	33,167,304	8,231,202	1 810,422	5,595,198	398,652	448,603,487	39,924,332

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	NOVEMBER, 1884. Wells.	Prod'n.	Dry.	OCTOBER, 1884. Wells.	Prod'n.	Dry.
Scio	1	6	0	1	10	0
Alma	2	15	0	3	10	2
Wirt	1	0	1	0	0	0
Bolivar	3	26	0	4	40	0
Clarksville	3	2	2	0	0	0
Genesee	0	0	0	1	10	0
Miscellaneous	1	0	1	0	0	0
Total	11	49	4	9	70	2

BRADFORD FIELD.

Division of Field.	NOVEMBER. Wells.	Prod'n.	Dry.	OCTOBER. Wells.	Prod'n.	Dry.
E. & W. Branches	2	6	1	5	46	0
Kendall Creek	0	0	0	1	8	0
Foster Brook	1	5	0	1	10	0
Four Mile	2	15	0	2	20	0
Indian&Meeks Cr'ks	1	5	0	1	0	1
Cole Creek	4	200	0	1	50	0
Kinzua	0	0	0	0	0	0
Total	10	231	1	11	134	1

WARREN AND FOREST.

District.	NOVEMBER. Wells.	Prod'n.	Dry.	OCTOBER. Wells.	Prod'n.	Dry.
Glade	8	23	4	14	134	4
Clarendon	4	16	1	7	37	1
Tiona	6	37	1	6	39	0
Cooper	1	0	1	1	5	0
Balltown	1	0	1	0	0	0
Miscellaneous	7	0	7	2	0	2
Total	27	76	15	30	215	7

LOWER COUNTRY.

District.	NOVEMBER. Wells.	Prod'n.	Dry.	OCTOBER. Wells.	Prod'n.	Dry.
Venango	8	80	1	11	132	1
Clarion	2	0	2	1	0	1
Butler and Armstrong	28	6341	3	17	9500	4
Total	38	6421	6	29	9632	6

GRAND SUMMARY.

District.	NOVEMBER. Wells.	Prod'n.	Dry.	OCTOBER. Wells.	Prod'n.	Dry.
Allegany	11	49	4	9	70	2
Bradford	10	231	1	11	134	1
Warren and Forest	27	76	15	30	215	7
Lower Field	38	6421	3	29	9632	6
November Total	86	6777	23	79	10051	16
Oct. Total	79	10051	16			
Difference	7	3274	7			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	DEC. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	0	11	2	13	1	12	1	14
Alma	1	13	2	16	1	12	2	15
Wirt	3	4	5	12	1	5	2	8
Bolivar	0	12	1	13	0	12	4	16
Clarksville	0	3	1	4	1	3	2	6
Genesee	0	16	0	16	0	16	0	16
Miscellaneous	0	1	0	1	0	1	1	2
Total	4	60	11	75	4	61	12	77

BRADFORD FIELD.

Division of Field.	DEC. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	1	17	2	20	2	17	1	20
Kendall Creek	1	8	1	10	0	9	1	10
Foster Brook	0	6	2	8	2	6	1	9
Four Mile	1	8	4	13	1	10	3	14
Indian Creek	0	9	0	9	0	9	1	10
Cole Creek	5	5	0	10	1	5	3	9
Kinzua	0	3	0	3	0	3	0	3
Miscellaneous	0	0	0	0	0	0	0	0
Total	8	56	9	73	6	59	10	75

WARREN AND FOREST.

Division of Field.	DEC. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	2	8	2	12	6	6	6	18
Clarendon	2	14	4	20	3	11	4	18
Tiona	4	8	9	21	0	8	6	14
Cooper	0	1	0	1	0	1	0	1
Balltown	0	8	1	9	1	8	1	10
Miscellaneous	1	1	5	7	1	2	7	10
Total	9	40	21	70	11	36	24	71

LOWER COUNTRY.

Division of Field.	DEC. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	2	4	5	11	5	4	9	18
Clarion	0	0	0	0	0	1	2	3
Butler & Armstrong	10	2	39	51	6	7	44	57
Total	12	6	44	62	11	12	55	78

GRAND SUMMARY.

Field.	DEC. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.	NOV. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	4	60	11	75	4	61	12	77
Bradford	8	56	9	73	6	59	10	75
Warren & Forest	9	40	21	70	11	36	24	71
Lower Country	12	6	44	62	11	12	55	78
Total Dec. 1	33	162	85	280	32	168	101	301
Total Nov. 1	32	168	101	301				
Difference	1	6	16	21				

THE THORN CREEK DEVELOPMENT.

No producing field yet discovered has been more carefully watched nor excited wider interest than the small area of gusher territory opened by the Phillips and Christie wells. And no field yet known in the history of the oil business has proved richer in its supplies of petroleum. During the past three months thirty wells have been drilled in the Thorn Creek district. Six of these were dry, but the remaining wells, up to the first of December, had produced above a half million barrels of oil.

In the November AGE the principal events of the Thorn Creek development, are recorded to the 15th of November. On that day 18 wells produced 15,445 bbls. of oil, according to the corrected gauges of the scouts. The history of the past thirty days is recorded chronologically, as follows:

Nov. 16.—Phillips Bros.' No. 1, on the Dodds, when 12 feet in the sand, yesterday afternoon, commenced flowing by heads. This morning's gauge showed its production 13 barrels an hour.

Nov. 17.—Phillips well, on Dodds, thirty feet in an inferior sand and averaging 11 barrels per hour.

Nov. 18.—Phillips, on Dodds, after drilling all day, makes 66 barrels in 8 hours. Fisher 14, Marshall, 36 feet in the sand, makes 10 barrels the past 24 hours. It will be pumped.

Nov. 19.—Connors & Fishell, No. 2, on Armstrong lease of the Marshall tract, starts flowing

at 6:30 a. m. and averages 12 barrels an hour up to 3:00 p. m., when deeper drilling increases it to 70 barrels an hour; said to be 17 feet in the sand. Fisher No. 1, on Marshall, 12 feet in the sand; plenty of salt water, but no show of oil. Christie Bros.' No. 4, Bartley, 16 feet in the sand, which is of good quality, but contains no oil.

Nov. 20.—Phillips Bros.' No. 5, Bartley, reached the sand last night; at 3 p. m. to-day it was making 25 barrels an hour; drill then ran into streak of softer sand, and production increased to 42 barrels the next hour, and afterwards to 150 barrels an hour. Connors 2 doing 120 barrels an hour. Christie 4 20 feet in the sand and showing light.

Nov. 21.—Phillips 5 drilling in harder sand and flowing 90 barrels an hour. Greenlee well drilled through sand and doing 70 barrels an hour. M. K. McMullen & Co.'s well on the Henderson, through the sand and dry.

Nov. 22.—The old Phillips No 1 on the Bartley farm is 82 days old and its last 24 hours' production is ten barrels. Not a single well in the field now doing 2,000 barrels a day. This morning's gauges of principal wells show the following: Fisher No. 3, 75; No. 6, 44; Phillips No. 2, 20; No. 5, 65; Connors No. 1, 14; No. 2, 70; Armstrong No. 2, 61; Greenlee No. 1, 60, and Christie No. 1, 7 barrels per hour.

Nov. 24.—Gibson No. 2 shot this afternoon and failed to respond; when bailed down began flowing heavily at 145 barrels an hour.

Nov. 25.—Gibson No. 2 averages 100 barrels an hour for first 11 hours after shooting, and then drops down to 76 barrels an hour. Connors No. 1 and Phillips No. 2 stop flowing. Fisher 6 flowing by heads.

Nov. 26.—Fisher No. 1, Marshall, shot at 6:45 p. m., but makes no response. Phillips & Simpson well, on the Kennedy, seven bits in the sand. After torpedoing, Connors No. 1 begins flowing again at 40 barrels and Phillips No. 2 at 25 barrels an hour.

Nov. 27.—Phillips & Simpson well, 14 feet in sand; no oil, but rock showing good. Fisher No. 1, Marshall, bailed water down to 500 feet, and tubed to exhaust brine by pumping.

Nov. 28.—The Phillips & Simpson break cable at the clamps and a fishing job begins. Fisher No. 1 pumping 300 barrels salt water and oil, one-third of which is crude. Phillips 2 stops flowing the second time. Gibson No. 1 has produced nothing in 36 hours and Armstrong No. 2 has declined to 30 barrels an hour.

Nov. 30.—McTammany & Co.'s well on the Brown farm finds 32 feet of poor sand and is dry. Fisher No. 1 pumping 125 barrels of crude a day. Reported that the Associated Producers had purchased a controlling interest in the McBride well.

The 24 Thorn Creek wells, with the date when they struck the sand, and the total production to December 1st, as furnished by the scouts' daily gauges, is given below. The pipe line runs from the Baldridge and Thorn Creek wells, for three months were as follows:

	Barrels.
September,	79,324
October	187,068
November,	284,806
Total	551,198

Farm.	Owner.	Date struck sand	Total Production to Dec. 1, '84
Bartley,	Phillips Bros., No. 1	Aug. 29	107,264
"	" No. 2	Oct. 20	38,246
"	" No. 3	Oct. 19	3,755
"	" No. 4	Nov. 4	220
"	" No. 5	Nov. 20	9,864
"	Christie Bros., No. 1	Oct. 11	64,640
"	" No. 2	Nov. 9	745
"	" No. 4	Nov. 18	
Marshall,	Armstrong & Co., No 1	June 27	14,000
"	" No 2	Oct. 29	93,438
"	Connors & Fishell, No. 1	Oct. 17	59,800
"	" No. 2	Nov. 19	15,228
"	Gibson & Co., No. 1	Nov. 10	7,034
"	" No. 2	Nov. 24	6,948
"	Greenlee & Co., No. 1	Nov. 15	25,342
"	Fisher Bros., No. 1	Nov. 28	250
"	" No. 3	Nov. 14	35,572
"	" No. 6	Nov. 12	23,229
Dodds,	Phillips Bros. No. 1	Nov. 15	2,367
Wallace,	Fisher Bros., No. 10	Oct. 15	8,288
"	" No. 11	Oct. 27	
"	" No. 12	Nov. 6	
"	" No. 14	Nov. 17	
Henderson,	Johnson Bros., No. 2	Oct. 3	380
	Total (24 wells)		516,590

Dec. 1.—Greenlee stops flowing; it is seventeen and a half days old and has produced 25,000 barrels of oil. Armstrong No. 2, thirty-five days old, is doing 21 barrels an hour; its greatest production was 360 barrels an hour; it was making 240 barrels an hour November 1st.

Dec. 2.—McBride well, on Scully, drilling in sand, and closely guarded. Fisher No. 1 pumping salt water and no oil. Phillips Bros.' No. 1, on the McCormack farm near Baldridge, through sand and rated at 50 barrels. Phillips Bros.' No. 2, on the Patterson, ten feet in very poor sand. Straight Run Oil Co.'s wildcat, on the Douthett farm, two miles southwest of developments, down and dry.

Dec. 3. Fisher No. 1, on Marshall tract, starts flowing at 6 a. m., at the rate of 60 barrels an hour and keeps it up all day. McBride well closely guarded.

Dec. 4.—McBride well ten bits in the sand. Phillips No. 6, Bartley, 7 feet in the sand and showing for small well. Phillips, on Patterson, thirty feet in sand with no oil.

Dec. 5.—McBride shut down at 11 a. m. Said to be 20 feet in sand. Last bit very good and owners believe well will be large. The laying of a three-inch line from the main pipe line to the well causes a stampede in the market. Fishing finished at Simpson and drilling resumed.

Dec. 6.—McBride well opened to the public. There are no signs of oil about derrick; plenty of salt water and sand is of good quality. Fisher No. 15, on the Marshall, began flowing at five o'clock yesterday afternoon and made 85 barrels up to 9 o'clock this morning.

Dec. 7.—McBride run three bits last night; sand closer and harder. Phillips, on Patterson, is through sand and nearly dry. Phillips Nos. 6 and 7, on Bartley, in sand and showing light.

Dec. 8.—McBride 27 feet in sand. Last two bits showing poor. Phillips & Simpson, on the Kennedy, 28 feet in sand; Two bits of very nice white pebble rock. Boyd & Co.'s No. 1, on Semple & Armstrong lease of the Marshall, is in the sand.

Dec. 9.—McBride 34 feet in sand. Simpson drilling all day and made a ten barrel flow in evening. Boyd well, south of Connors 2, ten feet in sand and no oil. Fisher 15, on Marshall, shot and makes 125 barrels first 24 hours. Phillips 6 through sand and showing poor.

Dec. 10.—McBride showing for dangerous well; 35 feet in beautiful white pebble sand. Boyd found oil 20 feet in sand and began flow-at 8 barrels an hour; soon increases to 75 barrels and at 3 p. m. was making 160 barrels an hour.

Dec. 11.—McBride through 47 feet of sand and ready to shoot. Boyd made 160 barrels an hour in the morning and 106 in the afternoon. Simpson 30 feet in sand and making ten barrels a day. Phillips 7 nearly through sand; showing no oil. Christie Bros.' No. 6, Bartley, is in the sand.

Dec. 12—McBride shot with 80 quarts at 3:30 p. m. Made 360 barrels first hour and 310 the second. Boyd averages 112 barrels an hour from 9 to 12 a. m. Fisher 8, Marshall, thirty feet in sand. Phillips No. 9 is drilling in pebble sand and has made one flow.

Dec. 13.—McBride doing 230 barrels an hour. Production of field 14,760 barrels; Phillips & Simpson, on Kennedy, shot and showing for small well.

Dec. 14.—McBride gauged 126 barrels hour ending at noon to-day. Fisher 8 through sand and bailing out; hole stands full of salt water and oil. Phillips No. 6, Bartley, making 25 barrels a day. No. 7 through sand and showing for 6 or 8 barrel well. Nos. 8 and 9 are both in sand.

Dec. 15,—McBride made 100 barrels for hour ending at 4 p. m. Torpedo at Fisher No. 8 failed to explode. Simpson, on Kennedy, is doing two hundred barrels a day.

The appended table shows the shifting production of the Thorn Creek wells on various dates since the 1st of December. The wells completed since the first of the month are Phillips No. 6, Patterson No. 1, Fisher No. 15, Boyd & Co. No. 1, Simpson No. 1, and McBride No. 1.

THORN CREEK PRODUCTION.

		Dec. 1 Bbls.	Dec. 2 Bbls.	Dec. 3 Bbls.	Dec. 6 Bbls.	Dec. 8 Bbls.	Dec. 10 Bbls.	Dec. 11 Bbls.	Dec. 12 Bbls.	Dec. 13 Bbls.
Bartley,	Phillips Bros., No. 1	6	0	15	71	70	116	125	120	135
"	" No. 2	0	158	71	69	70	55	60	65	62
"	" No. 3	20	11	11	27	10	9	10	10	10
"	" No. 4	0	8	15	10	10	8	10	10	10
"	" No. 5	600	480	480	360	360	600	504	432	480
"	" No. 6	. . .	. . .	. . .	. . .	. . .	. . .	. . .	35	65
Dodds,	" No. 1	50	85	110	16	10	25	35	35	41
Patterson,	" No. 1	. . .	. . .	. . .	. . .	. . .	6	4	5	0
Marshall,	Fisher Bros., No. 1	. . .	70	1,440	1,392	1,200	1,056	984	1,056	816
"	" No. 3	50	1,200	1,176	1,104	1,056	984	936	816	768
"	" No. 6	1,320	624	672	672	552	528	504	168	432
Wallace,	" No. 10	792	25	15	18	15	12	0	0	8
"	" No. 11	18	120	240	192	120	228	225	186	180
"	" No. 12	20	15	8	7	6	5	5	5	4
"	" No. 14	15	88	105	95	78	95	90	90	95
"	" No. 15	119	. . .	. . .	85	100	100	145	145	115
Marshall,	Connors & Fishell, No. 1	. . .	936	960	864	648	552	600	984	912
"	" No. 2	1,200	1,032	984	936	912	888	744	744	720
"	Gibson & Co., No. 1	1,100	0	0	0	0	36	45	72	99
"	" No. 2	0	600	480	0	0	0	0	0	81
"	Greenlee & Co., No. 1	864	0	0	125	120	177	175	163	1,800
"	Armstrong & Co., No. 1	900	0	0	0	0	0	0	0	0
"	" No. 2	0	0	0	0	0	0	0	0	0
"	Boyd & Co., No. 1	504	552	0	. . .	. . .	. . .	3,600	2,304	2,160
Henderson,	Johnson Bros., No. 2	. . .	. . .	. . .	. . .	6	6	6	6	6
Bartley,	Christie Bros., No. 1	6	75	6	6	50	90	125	120	180
"	" No. 2	140	80	80	90	360	100	20	150	200
"	" No. 4	76	60	60	140	15	0	0	0	60
Kennedy,	Phillips & Simpson, No. 1	50	. . .	40	40	. . .	. . .	. . .	. . .	25
Scully,	McBride & Co., No. 1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	4,800
	Total	7,850	6,225	6,968	6,319	5,768	5,676	8,952	7,689	14,264

Excursion Rates on N. Y., P. & O. R. R. during the Holidays.

On December 23, 24, 25, 30 and 31, 1884, and January 1, 1885, Tickets will be sold from and to all stations on the line of the New York, Penn. & Ohio Railroad, including Cincinnati and stations on C. H. & D. R. R. south of Dayton, at Special Excursion Rates. All Tickets will be good for return until January 2, 1885.

NOVEMBER PRODUCTION REPORT.

Reports from 6,221 Bradford wells, showed an average increase of 5.2 barrels to the well, during November.

Time.	No. Wells.	Gross Stocks.	Average per Well.
November 1, 1884	6,221	333,395	53.6
December 1, 1884	6,214	365,596	58.8
Difference,	7	32,201	5.2

The number of wells in the Bradford field connected with the pipe lines December 1st, is estimated at 13,338. Estimating the entire Bradford region on the basis of 5.2 barrels increase, the total increase in stocks at wells during November, was 69,357 barrels, a daily average of 2,237 barrels. Adding the increase in stocks the total runs as reported by the National Transit and Tidewater pipe lines, Bradford's daily average production for November is as follows:

	Barrels.
Average Daily Pipe Line Runs	29,552
Average Daily Increase of Stocks at Wells	2,237
Bradford's Nov. production, est.	31,789
do Oct. do do	31,758
do Sept. do do	32,976
do Aug. do do	33,353
do July do do	34,031
do June do do	33,753
do May do do	33,922
do April do do	32,442
do March do do	31,912
do February do do	32,378
do January do do 1884	31,806
do December do do	34,470
do Novemb'r do do	35,026
do October do do	35,654
do Septemb'r do do	34,966
do August do do	35,085
do July do do	34,537
do June do do 1883	35,270

This represents a slight increase, as compared with the October estimate, but the difference is so small that the daily production of the Bradford field for the past two months may be considered as remaining practically unchanged.

THE ALLEGANY FIELD.

The stock reports of the Allegany field are summarized as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
November 1, 1884	1,166	50,508	43.3
December 1, 1884	1,171	50,534	43.1
Difference	5	26	.2

The wells from which reports were received, evince a decrease of two-tenths barrels to the well, but this difference is too small to materially affect the runs as reported by the two pipe lines, and the average daily runs for November may be considered to represent the average daily production. The runs were 8,642 barrels a day, and placing the estimated production at that figure, gives an average decrease of 714 barrels a day from the preceding month.

	Barrels.
Allegany's November production is estimated at	8,642
Allegany's October production is estimated at	9,356
Allegany's September production is estimated at	9,877
Allegany's August production is estimated at	10,384
Allegany's July production is estimated at	11,218
Allegany's June production is estimated at	11,108
Allegany's May production is estimated at	11,547
Allegany's April production is estimated at	11,848
Allegany's March production is estimated at	11,768
Allegany's February production is estimated at	11,607
Allegany's January production is estimated at	11,263
Allegany's December production is estimated at	12,437
Allegany's November production is estimated at	12,678
Allegany's October production is estimated at	13,089
Allegany's September production is estimated at	12,335
Allegany's August production is estimated at	12,264
Allegany's July production is estimated at	12,345

WARREN, FOREST AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Warren, Forest and the Lower Country. The number of wells on the first of each month, with their averages, are contained in the following statement:

Field.	No. Wells. Nov. 1.	No. Wells. Dec. 1.	Average per Well. Nov. 1.	Average per Well Dec. 1.
Clarendon & Tiona	156	156	46	58
Cherry Grove	49	49	78	88
Cooper District	172	172	90	104
Lower Country	97	101	69	73
Miscellaneous	144	144	137	141

Accepting the outside runs, which are partially made up of the Wardwell and Baldridge runs, as representing the production, an estimate on the yield of the field for November and October would be as follows:

Field.	Nov. Barrels.	Oct. Barrels.
Allegany	8,642	9,356
Bradford	31,789	31,758
Outside runs	23,557	22,762
Total	63,988	63,876

The above figures show an increase in the production of 112 barrels per day. In these estimates no account is taken of the "dump oil" loaded on the cars direct from the wells at Emlenton and other points along the Allegheny river.

The runs from the Baldridge field increased at the rate of 3,459 barrels a day in November During the same period, the Wardwell runs declined 855 barrels, and Cherry Grove, Cooper and Balltown declined 637 barrels per diem.

A test well is to be sunk on the Robert Parsons farm at East Aurora, N. Y. An explosion occurred at a water tank, which is fed from a well 150 feet deep, severely burning the hired man, and the entire country is afflicted with the oleaginous fever.

The citizens of Braddock, Pa., enjoy the luxury of natural gas, in ordinary stoves at 75 cents and in kitchen stoves at $1.50 per month.

During the past three months the net stocks in the custody of the pipe lines have decreased 1,228,811 barrels.

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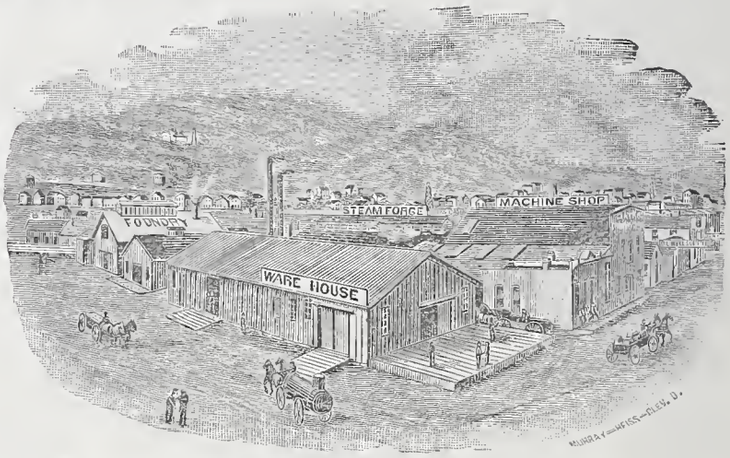

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THAT

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ROOM NO. 3,

OVER OIL WELL SUPPLY COMPANY, LIMITED,

Corner Main and Webster Streets, BRADFORD, PA.

THE PETROLEUM AGE.

VOL. III. BRADFORD, PA., JANUARY, 1885. No. 12.

A SWEET OIL STORY.

BY AN OCCASIONAL CONTRIBUTOR.

"Barney, the Pumper," *ne* McGalligan, looked at No. 8's beam between his feet, reclining on a spacious plank and resting his *cerebro spinal* upon his hands clasped behind his neck. A thirty-horse boiler, a roaring gas fire, a low water alarm and gas regulator testified to that love of ease so prevalent among the great army of pumpers. There was every evidence of orderly habits, and one might have looked upon the safety devices as indicating a desire to live for the sake of his wife and little ones. But none of these had Barney, and the mechanical triumphs mentioned were in some way a source of companionship. What so delightful as his present *siesta*, unbroken by fears of accidents or the petty vexations of the busy world?

For all this—while Barney noted the not ungraceful sway of the walking-beam—he chewed the cud of bitter fancy, and the great panorama of nature and the rig builder awoke no pleasure in his soul. It is one of the obliquities of Providence that the man who laughs at fate with the best of reasons is always within touch of a more or less bony skeleton, whose closet may open at any time. So it was with Barney; when, on the evening of the 3d of July, he put his keys in his pocket and faced the sunset on his homeward way, not even the oppressive heat of a sultry day had wearied his step or weighted his spirit. As he turned a corner of Farmer Kightlinger's field he saw half a dozen small boys in the midst of a clearing of their own making, where the grain and woodchucks were thickest. They were a Commission of Investigation in the affairs of one particular woodchuck whose size had made him the standard of intelligible comparison in matters of dimension. Then, as he passed the farmer's barn, seeing him cutting fodder for the cows, he remarked casually that if the boys didn't get the big woodchuck this time, it wouldn't be for lack of force.

Now if Farmer Kightlinger knew anything—sometimes a matter in argument—he embraced the meaning of these words and the opportunity for revenge upon the occasional tramplers in his grain. Before Barney had time to regret or modify his speech, the farmer and his son-in-law were after the trespassers. From the highway our self-reproachful pumper saw a sudden dissolution of the Commission of Plenary Powers and the capture of two of the shorter-legged members, all the others, including their dogs, making inglorious but satisfactory escapes. No other comforting reflection occurred to him at the time than the old juvenile maxim—"Killing they dassent do,"—but for all his misgivings the matter had faded from his mind when he reached his boarding house.

The heat of the day was past and only a red glow flamed behind the black skeleton derricks of the towering hills, when Barney, arrayed in the enchantments of manly attire as exemplified in Bradford sartorial art, began the slow walk to the nearest city of the many to be seen at that time along the ragged banks of Kendall creek. The attraction was a ball under the management of the Knights of Pythias, at a dollar a head. Upon this eventful evening the good ship of his existence, sailing a quiet sea, became a pitiful wreck. Barney McGalligan's smiling face, good clothes and manly bearing had long ago awakened much feminine admiration, and when he offered his arm to Miss McInerty and escorted her to a position in the opening dance, the young lady noted with some sweet confusion the envious glances of less favored ones. Some of these indeed enjoyed the pleasure of leaning on his shapely arm and clasping his hand in the musical labyrinths of the Virginia Reel, but Barney was entirely unconscious of his importance and estimation.

As he whirled a lively girl into the proper meridian and parallel of the floor, and gave way to other gentlemen ready to imitate his exertions, he saw through the mazes of the quadrille a girl of seventeen or less, with a sweet, troubled face, evidently annoyed by the attentions of a flashily-dressed man at her side. There were many very pretty girls in the room, and some had unmasked the battery of their smiles and winning glances harmlessly before the fortress of his heart. But as he looked at this girl for the first time, it seemed as if the cold finger of

Destiny slowly traveled along his spine until an impatient exclamation from his partner called him to his senses, and he wandered in a dazed way through the grand right and left of the final figure.

As the music died away, fairly from want of breath, supper was announced, and a sudden rush was made for the dressing room, the supper being served in another building across the narrow, stumpy street which labored up and down between the two sides of the city. Left alone by his partner, who was claimed under a previous engagement, Barney forgot his gallantry and duties to the fair dancers and lost himself in contemplating the newly-discovered young lady, to whom his heart had so suddenly and helplessly, not to say unreasonably, surrendered. She was apparently refusing the offer of the same admirer to take her to supper, and when at last she seemed to consent, Barney noted with misplaced satisfaction that she preferred to walk beside him without accepting the support of his arm. As they left the ball room he followed at a reasonable distance, and as he looked about him noticed the room was clear of all but the musicians. The sudden darkness blinded him as he closed the door, but in a moment he saw again, and heard the girl's voice in earnest words of protest addressed to her escort who seemed to have rudely clasped his arm about her. There was a little struggle and a scream, suppressed by a ruffianly hand, and then Barney struck the gentleman with good clothes just as 646 struck the market some three years later. He dropped as if shot, but almost instantly broke the silence with oaths and exclamations so energetic that the three found themselves the centre of an excited group, constantly reinforced from the street. There was the usual clamor of volunteered opinions and eager questions, during which Barney stood quietly awaiting the next turn of affairs. Finally, he told his story to some acquaintance, and as it was repeated by every tongue, there was new anxiety to know the girl's name. But she had disappeared instantly, and no one seemed to have any knowledge of her identity. Her well-punished admirer was not long in leaving the scene, breathing vengeance on his assailant.

Such a denouement left a great exclamation point suspended figuratively in the middle of the ball room, and everything else seemed to revolve about before Barney's eyes. He had suddenly become a focus for ocular and vocal admiration, and at the first grand musical crash disappeared from the room.

When the sun rose on the morning of the 103d anniversary of American independence, Barney McGalligan had all the symptoms of the 5th of July. He went to his daily labor with a swollen hand, a swelled head, and a profound contempt for that mechanical routine which for many months had been his history. The name of the beautiful protege remained unknown, even after the trial of ball-room gossip, and in this unfortunate fact Barney saw the opprobrium of his existence, mentally devoting his spare hours to eternal vigilance, even at the price of the relentless slavery of unrequited love.

When the Kightlinger farm was reached, the big woodchuck sat on the accustomed stump in quiet soliloquy over the scene of devastation, and his keen eyes discovered in the approaching pumper such indifference to things external as warranted him to peacefully remain in his place.

The boiler house stood on a side hill, one side some two feet from the ground, but boarded up between to keep out the cold. If Barney had had his usual faculties he would have noticed the condition of one of the boards nearest the ground, it having been removed and loosely replaced. But he did not, and unlocked the door, tried the gauges and turned on the gas. The safety-valve he set at sixty pounds and extended himself on the plank settee to win half an hour of sleep, trusting to the steam to waken him. It will be seen that in this profound belief in the capacity of a boiler to care for itself he approximated the pumper's creed.

Later on, he awoke from a mortal struggle with his ruffianly rival, and saw the gauge hand at zero, the gas out and the sun shining straight from overhead. He sprang to his feet and searched the premises. The board was now in its place, and there was no apparent trace of any intrusion. But the gas-line throttle was tightly shut, and as he opened it again his confused mind even entertained the possibility of his having failed to do it before.

It was nearly two o'clock before he had the first well pumping, and sunset lighted his homeward way. He knew his tardy return would be coupled with the excitement of the previous night, and almost sheepishly ate his supper with the family. The next day he determined to be early at the wells, that he might afterwards perhaps get some trace of the vanished heroine. Imagine that he did not even know a fighting chance existed for his success in following his suddenly impulsive aspirations. He was fishing in unknown waters, and might hook a dangerous

father or plighted lover with his lady fair, and again the same cold chill perambulated his nervous system as he thought it—even a husband was not less a possibility.

On the 5th Barney reached the lease about six o'clock, and after turning on a full head of gas, tried the upper gauge. There was no water. He tried the second; again no sign of water. It was with decided misgiving he lifted the handle of the lower gauge; the result was the same —the boiler appeared empty, and upon further examination the blow-off was found wide open. A multitude of conflicting thoughts rushed to Barney's head as he contemplated the prospect of filling a thirty-horse boiler by hand. The supply tank stood below the boiler house a few yards, and was filled by pumping from the creek. As Barney locked the door again, after deciding to go for help and pails to carry water in, he noticed for the first time on the boards a rude sketch of an animal whose identity was greatly obscured by the artist, and of unexplained presence, until it suddenly dawned upon Barney that what appeared to be a very liberal representation of either a tree or a stone, was in fact intended for a stump, and the whole intended as a portrayal of His Serene Highness, the Kightlinger woodchuck. In the muddy course of the wasted water two tracks of No. 5 shoes were plainly impressed, and upon the back end of the building was nailed a tattered and weather-beaten skin. These indications revived in Barney's mind a forgotten occurrence, and in the mishaps of two days he saw the workings of the Juvenile Commission, whose vengeance must be warded or disarmed. By such hard work as made him half forget a certain certainly pretty face, he managed to fill the boiler and pump off by dusk, nearly eight o'clock. Then he carefully inspected everything, drove the nails tighter that held the one window down, and took his usual way to supper. An hour afterward, in a driving shower, he returned and re-entered the boiler house where, in spite of the heat from the boiler, in which a small gas flame still burned, he extended himself upon his wooden hammock, and exhausted by undue bodily and mental trials, was soon asleep and forgetful of the young marauders, whose plans he expected to detect.

Half an hour later, two small boys of uncertain features and favors in the gloom, climbed the nearest fence and reconnoitered the hostile camp. Satisfied to advance—this they did very quietly, and with perhaps exaggerated outward imitations of scouts, or murderers, or burglars, gradually reached the board they had once neglected to replace aright. This they moved away to make an opening into the space between the boiler-house floor and the sloping surface of the hill. If Barney had been awake he might have seen in the weird and baffling flickering of the gas a noiselessly lifted board (in the floor), a small bright pair of eyes, and a nimble owner following. But Barney was away in the peaceful land of Nod, where the rich and the poor alike find the happiest restful half of their lives, and he saw nothing of the small visitor as he turned the throttle and let the gas rush in noiseless, buoyant waves of flame through the half-warm flues. Something about the dome of the boiler now seemed to require his attention, and then he descended like a veritable gnome, the floor closed, and nothing but the purring flames redeemed the rude interior from the loneliness of inanimation. Barney McGalligan, earning seventy dollars a month, slept the sleep, not of the righteous, but of the opulent; rode in radiant landaulets, and reaped a wealth of smiles from the lips and eyes he never had seen smiling out of this blessed land of Nod. What wonderful castles of Spain shiver and fall to dust when the envious emissaries of the cruel world scale its shallow walls and call us back again! To walk where the fairy's wand brings no footmen or chariot or shining robes, beneath inscrutable laws immutable in the rigor and sullen selfishness of human wills; to grow hard and old where the hands of the dial turn never back and we dare not hope with the vanished mariners of old, for the Fountain of Rejuvenation. This is why in the quiet morning ticking of the clock we sometimes hear a voice we dread and an unsaid, unholy prayer for sleep—a deathless sleep—that darts through the mind like a thrust of a two-edged sword. And still the tired pumper forgot the shallow walls of the land of dreams, till over their pitiful heights two Envoys Extraordinary of the Juvenile Commission blew a blast that sent to ruin the rosy chateaux, the fields of flowers, sweet faces and soaring songs, and all the unalloyed golden elements of the unordered happiness of darkness that had filled the roughness and loneliness of his sleeping-place.

He awoke instantly with the roar of escaping steam filling his ears as the steam itself filled the room. The gas was out again, and it was some time before he groped his way to the firebox to light it, frightened at the terrible noise and almost certain the boiler had been burned. As he struck a match, and the light flashed with

a feeble sulphur gleam, the noise of the steam ceased instantly and the sound of a steady summer rain was all he heard. The steam-gauge showed but forty pounds, and on careful examination of every part of the place there appeared no signs of the agencies employed to annoy him. It was an hour before he could commit himself to the risks of sleeping again, but nature conquered his hesitation, and when he woke the sun was well above the trees.

The rain had removed any traces of his visitors, and he went to his breakfast with a vague feeling of being a marked man, and in the event of any more serious disturbances would have connected the visitations with the threats of his self-appointed rival.

[TO BE CONTINUED.]

THE SHUT-DOWN MOVEMENT DISCONTINUED.

On the 21st of August last, at a public meeting of the Associated Producers held in Bradford, it was found that over three-fourths of the producers of the entire region had signed an agreement to suspend operations until January 1st, 1885. The conditions of the agreement upon which the signatures had been obtained having been fulfilled, the shut-down was declared "on" for the time specified. This movement, which expired at the close of the year, has reduced field operations to a minimum in all sections outside of the Thorn Creek field, where conflicting interests rendered a suspension of drilling inexpedient. To the credit of the producing fraternity it may be said that the signers of the shut-down movement have honorably kept their agreement and that a larger number of oil men have worked harmoniously together than was ever known to move in unison before in the history of the business. One outgrowth of the movement has been the formation of a powerful corporation for the purpose of buying and operating oil lands. The Associated Producers' Company has been incorporated with a capital stock of $1,000,000, and the legal right to increase it to $5,000,000. This company has purchased the McKeown property at the Cole Creek front in the Bradford field, which enables them to work with two large firms in timing the movement of the drill on the small amount of rich territory which remains undrilled in the once great northern district. They have prevented a Cherry Grove rush by securing control of the lands north south and east of the McBride well in the Thorn Creek district. If the pool or belt extends to the southeast, which seems to be its trend, it must pass into their property.

On the 6th of January there was a meeting at the Producers Exchange to determine whether or not the shut down should be continued. The meeting was called to order by John L. McKinney, chairman of the Executive Committee, who appointed F. W. Mitchell chairman of the meeting. Mr. McKinney stated the object of the meeting and suggested that the report of the Executive Committee be first read. Below is the report in full:

OIL CITY, PA., Jan. 3, 1885.

To the Associated Producers:

Your Executive Committee, appointed at the meeting held at Bradford June 11, 1884, beg leave to report:

They have held meetings at various places in the field, appointed sub-committees in different localities and have endeavored to harmonize differences between members and non-members in field operations, and believe they have been instrumental in stopping a large amount of work in different parts of the field.

They desire to convey the information to the oil trade in general that notwithstanding the oft-repeated assertion "that you could not hold so great a number of operators (nearly 1,000) together," not one case of violation of agreement has been brought before us.

When the Wardwell district was opened your committee met several times at Warren, Pa., and granted our members permission to drill, offsetting the work of other parties.

The calls were so frequent we deemed it best for all parties to remove the restrictions in that locality and have the field drilled as soon as possible, as some of our members were suffering by adherence to the agreement.

Your committee by its representatives, and some of the committee in person, made repeated efforts to persuade the Butler and Baldridge operators to sign the agreement; some of them did so, but when it was found impossible to obtain a majority with us, we gave those who had signed and were operating in the district permission to drill.

The condition of operations in the field when the agreement was being signed was as follows:

Allegany	168
Bradford	184
Lower Country	391
Total	743

The following is the report of operations in the same localities at present:

Allegany	24
Bradford	22
Lower Country	55
Total	101
Difference	642

	Barrels.
The daily production in the above localities when the agreement took effect was	65,000
At present the same localities are producing	52,000
We estimate the production for the entire field at	60,000

When we take into consideration the opening of Wardwell with its large production and the number of wells drilled in the field by outside parties, the figures show without comment what our association would have accomplished had our fellow producers in the entire field co-operated with us.

The resolution to contribute five cents per barrel on one day's production was responded to by eighty-six signers, who contributed $1,397.40. The amount paid for work done in the field and reports of operations was $1,361.19. Balance on hand $36.21.

There are some bills unpaid and parties who are able should send in the amount they owe to F. W. Mitchell, Treasurer, Oil City, Pa., that all bills contracted may be paid.

Your committee wish it understood that they have paid their own expenses and devoted their time without compensation.

The amount we owe is for expenses incurred in obtaining signers and reports of operations in the field.

Some of the members of this Association have formed themselves into a corporation for the purpose of buying and operating oil lands. Before closing the stock book all signers to the agreement were offered a portion of the stock, but owing to a scarcity of money few were able to avail themselves of the offer.

We can assure the Associated Producers the company formed is willing at all times to act with the majority of the oil trade in any legitimate way to bring our business to a better condition.

Your committee have carefully estimated the cost of producing in the different fields and feel confident there is no profit in producing oil at present prices.

In view of the foregoing, and believing those who have ceased operations for the past seven months will see the object gained by a little longer cessation, your committee would recommend calling a meeting at Bradford at an early date to request all signers to agree to a continuation for four (4) months, and to give an urgent request to all parties to come in, even at this late day, and help themselves and the oil producers in general by stopping all work in the field until May 1st, 1885.

Respectfully submitted,

J. L. McKinney, Chairman.
W. H. Johnson, Sec'y.

The report was unanimously adopted. Mr. L. H. Smith, President of the New York Petroleum Exchange, and who is largely interested in producing oil, spoke in favor of a continuation of the suspension of field operations. He denounced the apathy and indifference of the residents of the oil region in regard to the movement, when there was so much interest outside the oil country and even beyond the sea. He claimed that the production had declined 6,000 barrels since the shut-down movement had been inaugurated, and that outside of the Thorn Creek district there had been a decrease of 14,000 barrels in the daily yield.

David Kirk, Esq., the energetic manager of the Executive Committee, to whom a large amount of credit is due for the successful carrying out of the shut-down movement, spoke in defense of the motives of the men who had been the active leaders in the work. He thought a continuation of the shut-down would induce non-signers to drill on insignificant territory, but was willing to do what would result in the greatest good for the greatest number. Mr. Kirk said he was prepared to prove that there was not a field in the region to-day where oil could be produced for the present price—73 cents. He would not except Thorn Creek, where he said the whole section was being operated at a loss at ruling prices.

Col. John J. Carter gave his testimony against a prolongation of the shut-down, and related Jim Fisk's graveyard story with good effect. Mr. Carter believed the time had come when the necessity did not exist for a shut down. He said the drill would remain at rest where it had ceased to vibrate, because there was no territory in those sections which could be operated with profit. The speaker claimed there was not a man present who controlled territory in McKean county that could be drilled profitably under a $1.50 market. He was willing to place his signature to the shut-down agreement because he did not expect to drill in any event for a period of six months. He had come to this decision because the number of his shekels in the bank would not warrant it. He knew the production was going down while the consumption was going up. Every one who was familiar with the subject saw that the McKean field was in its death throes, and he thought the world should know that it had reached a period when its daily yield was going down.

Captain J. T. Jones gave a statistical review of the situation and expressed a desire to have the movement terminated, if the producers decided that it should be in a manner in keeping with the good work which had been done. He believed that the shut-down would continue without any pressure being brought to bear in that direction.

A short recess was taken while Messrs. W. J. Young, John J. Carter and W. H. Johnson prepared the following resolutions, which were unanimously adopted:

WHEREAS, That since the inauguration of the shut-down movement prices have so declined by reason of outside influences that it makes it unprofitable to produce oil in any field outside of Thorn Creek; and,

WHEREAS, We, in our efforts, have been unable to get the co-operation of producers in that field, we, therefore,

Resolve, That it is inexpedient to continue the shut-down, believing that without its continuance operations will not be increased.

During the development of the Cherry Grove pool in the summer of 1882 field operations in all other sections were reduced to a low ebb. The condition before and just at the close of that famous fiasco is best illustrated by publishing the May 1st and October 1st monthly reports.

MAY 1, 1882.

Field.	Wells.	Prod'n.	Dry.	Rigs.	Drilling.	Total.
Bradford	125	1809	3	163	134	297
Allegany	259	7021	4	218	218	436
Warren & Forest	38	508	2	52	49	101
Lower Field . .	19	88	7	18	24	42
Total, May 1 .	441	9426	16	451	425	876

OCTOBER 1. 1882.

Field.	Wells.	Prod'n.	Dry.	Rigs.	Drilling.	Total.
Bradford	14	335	0	62	15	77
Allegany . . .	29	575	3	69	38	107
Cherry Grove . .	108	3296	2	21	45	66
Warren & Forest	5	105	3	16	9	25
Lower Field . .	14	298	5	8	18	26
Total, Oct. 1 .	170	4559	13	176	125	301
Total, May 1 .	441	9426	16	451	425	876
Decrease . . .	271	4877	3	275	300	575

During the five months following the opening up of the gusher on 646 the number of wells completed in the Bradford field was reduced from 125 to 14, and in the Allegany district from 259 to 29. New operations declined 575 from May 1st to October 1st and on the first of January, 1883, the number of rigs up and building and wells drilling was reduced to 263. In the past history of the business a natural shut-down has been continued without the aid of any artificial or extraneous forces.

It is the fixed policy of Bismarck to discriminate against American petroleum as well as American pork. A bill is before the German "Bundesrath," that will increase the duty on American kerosene to 4½ cents a gallon. The motive is to favor the Russian Petroleum interests at the expense of the United States. The bill encounters opposition from the peasant consumers of our product and the German merchant marine, upon which the proposed restriction will fall most heavily. Our imports from Germany amount to $60,000,000 annually, and our Congress has the power to cause her to lose more trade with us than she can ever hope to gain from Imperial Russia.

CRUDE MARKET FOR DECEMBER.

The greatest strength of the crude market was manifested the first week in December, when the trade had apparently decided that the McBride well was to mark the limit of the Thorn Creek development to the southeast. Upon the 5th it was reported that a three-inch line was being laid to the well, and a miniature panic occurred, prices dropping six cents within a single hour. There was a slight recovery the following day, but a feeling of distrust prevailed, and the McBride began to be regarded as a dangerous well. A condition of waiting expectancy ensued until the 12th, when the McBride well was shot. The next day the market sold down to 67 cents, a decline of 13 cents from the price at the beginning of the month. Nothing of a startling nature occurred until the 19th, when upon the firing of Fisher No. 8, on the Marshall tract, and reports of a heavy decline in the gauges of the Thorn Creek gushers, prices were rushed up to 78½ cents. It is a curious circumstance, that each of these sudden changes in the state of affairs on Thorn Creek and the corresponding activity on the floors of the Exchanges occurred upon the three Fridays, December 5th, 12th and 19th. The closing days of the year witnessed a quiet market with but slight changes.

The opening price of the month was strong at 79@80 cents, and the highest figure was reached on the 2nd, when a few sales occurred at Pittsburgh at 80½ cents. The lowest figure, 67 cents, was touched at Oil City, on the 13th, the day after the McBride well was torpedoed. The highest and lowest prices for December, 67 and 80 cents, were the same as for the month of November.

The average price for the month on the floor of the Bradford Exchange was 74⅜ cents, as compared with 72½ cents in November and 71 cents in October. The average price for December, one year ago, was 114⅓.

The amount of business transacted as represented by the clearances at the five leading Exchanges, although still below the average, is largely in excess of the figures for November.

THE CLEARANCES.

	December Barrels.	November. Barrels.
Bradford Oil Exchange . . .	118,074,000	69,610,000
Oil City.	151,418,000	89,176,000
New York, N. Y. Pet	110,186,000	82,448,000
New York, National	213,215,000	166,986,000
Pittsburgh Petroleum (new). .	74,348,000	46,418,000
Total	667,241,000	454,638,000

THE Thorn Creek runs averaged 8,750 barrels in December, a decline of 763 from the November average.

THE REFINED MARKET.

The month in refined circles has been very dull, and prices for export have undergone but little change. The year has been somewhat unsatisfactory to the exporter, who has been looking for a lower range of prices. The sales for December will aggregate less than 200,000 barrels. The London market advanced from 6¾ to 7¼*d* and a further rise is anticipated for January. The available stocks are at a very low ebb, and as nearly all time contracts expire in December, dealers will be forced to buy largely after the first of the year.

Refined in cases was moderately active at the old figures, 9¼ cents for plain brands. Sales of 1,200,000 are reported for Japan, British India and Algeria. The domestic trade remained steady at former prices.

	New York.	Philadelphia.	Baltimore..	London and Liverpool..	Bremen...	Antwerp..
	Cts.	Cts.	Cts.	Pence.	Marks.	Francs
M 1	7⅞	7¾	7¾	6¾	7 40	18¼
T 2	7⅞	7¾	7¾	6¾	7 40	18¼
W 3	7⅞	7¾	7¾	6¾	7 40	18¼
T 4	7⅞	7¾	7¾	6¾	7 40	18¼
F 5	7⅞	7¾	7¾	6¾	7 35	18¼
S 6	7⅞	7¾	7¾	6¾	7 30	18¼
M 8	7⅞	7¾	7¾	6⅝	7 40	18¼
T 9	7¾	7⅝	7⅝	6⅝	7 40	18¼
W 10	7¾	7⅝	7⅝	6⅝	7 40	18⅛
T 11	7¾	7⅝	7⅝	6¾	7 35	18¼
F 12	7⅞	7⅝	7⅝	6¾	7 30	18¼
S 13	7⅞	7⅝	7⅝	6¾	7 30	18¼
M 15	7¾	7⅝	7⅝	6¾	7 25	18¼
T 16	7¾	7⅝	7⅝	6¾	7 20	18⅛
W 17	7⅞	7¾	7¾	6¾	7 20	18¼
T 18	7⅞	7¾	7¾	6¾	7 20	18¼
F 19	7⅞	7¾	7¾	6¾	7 20	18¼
S 20	7⅞	7¾	7¾	6¾	7 20	18¼
M 22	7¾	7¾	7¾	6¾	7 20	18¼
T 23	7¾	7¾	7¾	7⅛	7 25	18⅜
W 24	7¾	7¾	7¾	7⅛	7 25	18⅜
T 25	—	—	—	—	—	—
F 26	7⅞	7¾	7¾	7⅛	7 25	18⅜
S 27	7⅞	7¾	7¾	7⅛	7 25	18⅜
M 29	8⅛	7¾	7¾	7¼	7 25	18½
T 30	8⅛	7¾	7¾	7⅛	7 20	18½
W 31	8¼	7¾	7¾	7⅛	7 20	18½

PETROLEUM EXPORTS.

THE exports of refined, crude and naphtha, from all United States ports from Jan. 1 to Dec. 31, for the years 1883, 1884, were as follows:

	1884. Gallons.	1883. Gallons.
From Boston	7,495,074	4,770,407
Philadelphia	119,268,919	79,505,430
Baltimore	15,158,733	11,103,599
Richmond	.....	173,449
Total	141,922,726	95,552,885
From New York	384,521,437	418,449,453
Total exports from United States	526,444,163	514,002,338

The appended table from the *Shipping List* gives the total exports of refined, crude, naphtha and residuum from New York to foreign ports from January 1st to December 31st, for the years of 1883 and 1884:

REFINED.

	1884.	1883.
GREAT BRITAIN.—London	18,498,831	36,005,630
Liverpool	9,009,430	11,115,584
Bristol	3,824,381	3,855,673
Ireland	5,335,599	5,791,493
Other ports	6,543,519	6,845,623
GERMANY—Bremen	30,327,016	46,645,007
Hamburg	32,545,982	32,275,401
Konigsburg and Stettin	6,768,171	4,766,126
Dantzic	1,102,897	1,110,141
Other Ports	1,372,183	835,570
FRANCE—Marseilles	....	....
Havre	....	....
Norway and Sweden	5,454,902	7,333,437
Russia	188,822	1,539,155
Denmark	7,780,317	8,545,271
Belgium	32,269,032	36,663,165
Holland	15,657,198	13,922,684
Spain	370,960	282,480
Portugal	1,310,612	2,009,420
Gibraltar and Malta	8,267,780	2,506,318
Italy	2,191,084	2,636,346
AUSTRIA.—Trieste, etc	6,281,043	15,505,652
Greece	1,095,010	1,280,410
Turkey in Europe	3,572,180	4,165,261
Turkey in Asia	3,220,195	3,080,742
India	28,699,200	16,332,970
China, Japan, etc	26,842,880	24,693,470
East Indies	28,762,320	31,403,150
AFRICA.—Alexandria, etc. E	3,483,440	2,813,050
Canary Islands	182,379	153,849
Other Ports	6,096,635	4,848,329
Australia	2,813,836	2,284,946
New Zealand	858,451	660,180
Sandwich Islands	223,580	242,500
SOUTH AMERICA.—Brazil	6,105,565	5,991,804
Argentine Confederation	5,893,250	3,810,423
Chili and Peru	1,054,014	1,416,050
U. S. Columbia	464,707	335,404
Venezuela	723,526	662,254
Other Ports	67,101	119,461
Central America	306,094	244,340
Mexico	1,215,032	1,334,663
British North American Colonies	1,383,097	1,211,126
Cuba	420,561	248,496
British West Indies and Br. Guiana	1,534,902	1,604,166
Other West Indies	1,239,512	926,314
Total . . . . . Galls.	316,357,276	350,053,535

CRUDE.

	1884.	1883.
FRANCE.—Havre	9,146,170	10,541,315
Marseilles	4,620,174	3,690,400
Bordeaux	2,434,925	2,451,408
Dunkirk	6,741,170	7,641,323
Other Ports	9,883,893	8,922,915
Antwerp	....	....
Bremen	425,850	753,616
Norway and Sweden	....	62,374
Spain	15,113,436	12,411,383
Cuba	2,857,852	2,171,437
Other Ports	6,070,624	2,347,315
Total . . . . . Galls.	57,294,094	50,993,486

NAPHTHA.

	1884.	1883.
Great Britain	4,483,110	5,844,951
France	3,414,282	6,125,392
Germany	521,780	1,668,038
Other Europe	983,201	1,665,163
Various Ports	221,073	98,888
Total . . . . . Galls.	9,623,446	15,402,432

RESIDUUM.

	1884.	1883.
To all Ports	3,941,795	6,494,597

	Gallons.
Total Refined since January 1, actual shipments	317,603,397
do do do do crude equivalent	423,471,196
do Crude do do actual shipments	57,294,094
Grand Total Crude and Crude equivalent . . . . galls.	480,765,290
Same time, 1883	523,073,808

The following table shows the number of vessels loading and to load with Petroleum at the principal American shipping ports, January 7th, 1884:

PORTS.	Refined Bbls.	Refined Cases.	Crude.	Naph.	Res.	Total.
New York	20	23	11	4	1	59
Philadelphia	3	12	6	1	0	22
Baltimore	2	1	0	0	2	5
Boston	0	0	0	0	0	0
Total Dec. 10	25	36	17	5	3	86
Total Nov. 8	51	55	24	9	2	141
Difference	26	19	7	4	1	55

RUNS, SHIPMENTS AND STOCKS.

RUNS OR RECEIPTS.

Pipe Line.	December. 1884.	November, 1884.
National Transit Co	1,689,152.32	1,639,164.61
Tidewater	211,458.52	202,573.21
Octave Oil Co	3,047.06	2,582.52
Charley Run	....	.....
Shaffer Run	....	.....
Franklin (limited)	7,904.32	5,796.20
Cranberry Pipe Line	2,478.94	2,405.95
Total	1,914,042.16	1,852,522.49
Daily average	61,743.29	61,750.74

In the above runs only the oil received by the National Transit Co. directly from the wells, is included.

DELIVERIES OR SHIPMENTS.

Pipe Line.	December, 1884.	November, 1884.
National Transit Co	2,160,764.60	1,874,330.79
Tidewater	208,981.48	189,802.89
Octave Oil Co	3,661.88	2,559.67
Charley Run	.....	.....
Shaffer Run	.....	.....
Franklin (limited)	5,693.70	8,424.84
Cranberry Pipe Line	1,993.35	2,796.76
Total	2,381,037.01	2,077,914.95
Daily average shipments	76,807.65	69,263.83

In the above shipments only the oil delivered to refiners is included.

Daily exceos of shipments over runs, December, 1884	15,064.36
Daily excess of shipments over runs, November, 1884	7,513.09
Daily excess of shipments over runs, October, 1884	17,901.36
Daily excess of shipments over runs, September, 1884	10,439.21
Daily excess of runs over shipments August, 1884	2,593.82
Daily excess of runs over shipments, July, 1884	10,5[illegible]2.22
Daily excess of runs over shipments, June, 1884	6,443.56
Daily excess of runs over shipments, May, 1884	10,239.88
Daily excess of runs over shipments, April, 1884	11,020.89
Daily excess of runs over shipments, March, 1884	4,144.98
Daily exeess of runs over shipments, February, 1884	5,153.94
Daily excess of runs over shipments, January, 1884	3,774.23
Daily excess of runs over shipments, December	6,395.92
Daily excess of shipments over runs, November	3,548.49
Daily excess of shipments over runs, October	3,972.41
Daily excess of shipments over runs, September	11,372.77
Daily excess of runs over shipments August	1,571.67
Daily excess of runs over shipments, July	12,905.31
Daily excess of runs over shipments, June	12,183.86

NET STOCKS.

Pipe Line.	December, 31, 1884.	November 30, 1884.
National Transit Co	35,227,568.84	36,213,728.26
Tidewater	1,517,505.89	1,518,461.18
Octave Oil Co	6,083.88	5,348.28
Charley Run	3,717.00	3,717.00
Shaffer Run	30,636.32	30,636,32
Franklin (limited)	23,548.18	21,337.56
Cranberry Pipe Line	25,737.92	25,193.33
United Pipe Line	38,094.38	38,770.81
Total	36,872,892.41	37,857,192.74

Stocks decreased December, 1884	984,300.33
Stocks decreased November, 1884	266,552.87
Stocks decreased Oclober, 1884	616,976.88
Stocks decreased September, 1884	345,281.52
Stocks increased August, 1884	97,092.86
Stocks increased July, 1884	323,063.10
Stocks increased June, 1884	190,320.23
Stocks increased May, 1884	322,981.75
Stocks increased April, 1884	1,945,919.83
Stocks increased March, 1884	164,711.33
Stocks increased February, 1884	206,984.61
Stocks increased January, 1884	119,365.56
Stocks increased, December, 1883	220,328.28
Stocks Decreased November	121,800.43
Stocks Decreased October	135,681.61
Stocks Decreased September	350,167.79
Stocks Decreased August	269,053.22
Stocks Increased July	386,004.51

	Receipts.	Deliveries.
Daily Average December	61,743	76,808
Daily Average November 1884	61,751	69,264
Daily Average October, 1884	63,064	80.966
Daily Average September, 1884	65,952	76,391
Daily Avera e August, 1884	66,996	64,402
Daily Average July, 1884	66,702	56,170
Daily Average June, 1884	67,350	60,907
Daily Average May, 1884	66,688	56,448
Daily Average April, 1884	65,794	54,773
Daily Average March, 1884	64,590	60,445
Daily Average February, 1884	64,573	59,420
Daily Average January, 1884	58,178	54,404
Daily Average December, 1883	62,830	56,434
Daily Average November	65,281	68,829
Daily Average October	67,649	71,621
Daily Average September	66,210	77,582
Daily Average August	68,877	67,306
Daily Average July	65,628	52,722
Daily Average June	70,443	58,259
Daily Average May	69,445	61,411
Daily Average April	69,207	63,612
Daily Average March	64,404	52,737
Daily Average February	65,208	44,352
Daily Average January	65,125	43 813

SUMMARY of the statement by the United Pipe Lines January 10, 1885:

Outstanding acceptances and certificates December 31	13,546,96
Credit balances	24.547,42
Total l abilities December 31	38,094.38
Gross stocks	38,094.38
Sediment and surplus	....
Receipts from all sources	....
Total deliveries	676.43

NOVEMBER SUMMARY.

Acceptances and certificates, November 30	13,641.25
Credit balances November 30	25,129.56
Total liabilities November 30	38,770.81
Gross stocks	38,770.81
Sediment and surplus	....
Receipts from all sources	....
Net stocks delivered to National Transit Co November	6,484.57

SUMMARY of the statement of the Tidewater Pipe Co., Limited, for December, 1884.

		Barrels.
Quantity of crude petroleum in custody at beginning of December		1,518,461.18
Quantity of crude petroleum at close of Dec.	1,589,838.90	
Less sediment and surplus	72,333.01	
		1,517,505.89
Receipts during December		211,458,52
Deliveries during December—to refiners	208,981.48	
" " " —to other parties	....	
		208,981.48
Outstanding certificates, accepted orders, etc		847,000.00
Credit balances		670,505.89
Total liabilities December 31, 1884		1,517,505.89

NOVEMBER SUMMARY.

		Barrels.
Quantity of crude petroleum in custody at beginning of November		1,510,227.30
Quantity of crude petroleum at close of Nov.	1,588,769.23	
Less sediment and surplus	70,308.05	
		1,518,461.18
Receipts during November		202,573.21
Deliveries during November—to refiners	189,802.89	
" " " —to other parties	.....	
		189,802.89
Outstanding certificates, accepted orders, etc		831,000.00
Credit balances		687,461.18
Total liabilities November 30, 1884		1,518,461.18

SUMMARY of the statements of the National Transit Co., for Dec. and November 1884.

	December.	November.
Receipts from all sources	1,689,828.75	1,645,549.18
Deliveries	2,160,764.60	1,874,330.79
Gross stocks end of month	37,778,455.10	38,349,404.31
Sediment and surplus	2,550,886.26	2,135,676.05
Total liabilities end of month	35,227,568.84	36,213,728.26
Outstanding acceptances	28,181,375.24	28,594,995,90
Credit balances	7,046,193.60	7,018,732.36

The above receipts from all sources for December were made up as follows:

Transferred from United Pipe Line as reported to N. F. Hilton, representing Conference of Oil Exchanges	676.43	
Less sediment and surplus	....	
Net amount from United Pipe Lines		676.43
Runs from wells		1,689,152.32
Received in iron tanks		.....
Total		1,689,828.75

The above receipts from all sources for November were made up as follows:

Transferred from United Pipe Lines, as reported to N. F. Hilton, Esq., representing the Conference of Oil Exchanges	6,484.57	
Less sediment and surplus	...	
Net amount from United Pipe Lines		6,484.57
Runs from wells		1,639,164.61
Received in iron tanks		.....
Total barrels		1,645,649.18

The officers of the Franklin Pipe Co. (Limited), elected for 1885, are: President, J. W. Grant; Secretary and Treasurer, D. Grimm; Superintendent, E. Black. Directors—J. W. Grant, D. Grimm, Mrs. D. E. Craft, D. McIntosh, W. G. Scheide.

PIPE LINE RUNS BY DISTRICTS.

The difference between the Bradford and Allegany runs and those of the entire region make up what is termed the outside runs. Taken for a number of consecutive months these show the production of all sections of the oil regions outside of Bradford and Allegany. The following table shows the average daily runs for Allegany, Bradford, and the outside region from the 1st of January, exclusive of oil which was received in iron tanks and had previously been counted as runs:

1883. MONTH.	RUNS. BRADFORD.	RUNS. ALLEGANY.	RUNS. OUTSIDE	TOTAL. DAILY RUNS
January	36,847	14,106	14,172	65,125
February	38,481	13,154	13,573	65,208
March	37,754	12,619	14,031	64,404
April	38,810	13,742	16,655	69,207
May	39,039	13,793	16,613	69,445
June	38,614	13,499	18,330	70,443
July	36,489	12,381	16,758	65,628
August	37,165	12,743	18,969	68,877
September	35,894	12,358	17,958	66,210
October	35,654	12,757	19,238	67,649
November	34,516	12,332	18,433	65,281
December	32,650	11,752	18,428	62,830
January, 1884	31,020	11,018	16,140	58,178
February, 1884	33,987	12,025	18,561	64,573
March, 1884	33,049	11,777	19,764	64,590
April, 1884	34,370	12,261	19,162	65,793
May, 1884	34,946	12,193	19,549	66,688
June, 1884	35,701	11,672	19,977	67,350
July, 1884	34,718	11,114	20,870	66,702
August, 1884	33,782	10,384	22,830	66,996
September, 1884	33,449	9,989	22,514	65,952
October, 1884	31,500	8,802	22,762	63,064
November, 1884	29,552	8,642	23,557	61,751
December, 1884	30,632	8,193	22,918	61,743

MACKSBURG REVIEW.

When the wild-cat field fails to afford something of a sensational character, the oil market manipulator turns his eyes toward Macksburg, where distance seems to lend magnitude to an ordinary strike in a defined field. For instance the Syndicate Oil Co.'s well on the Gordon farm, lacks the geographical position which would give it any special importance in defining the limits of the field. Yet it was used as a lever in depressing the price of oil several notches on the scale before its actual producing capacity could be estimated. The only noticeable feature about the well was the unusual thickness of oil bearing sand. Macksburg territory is recognized as quite regular where operating is reduced to the same basis as it was in McKean county, only its caliber is of a lighter grade than the best in the Bradford district. During the year of 1884, the production of the district was gradually increased after oil region began to be expended within its borders. The daily average production during the last five months has been as follows:

Montb.	Barrels.
August	276
September	372
October	400
November	523
December	644

On the first of the year there were 70 wells producing from the deep sand. During the year 1884 twelve dry holes were sunk north, east and south-east of the field. Nearly all of them were drilled by Bradford operators. Five wells were finished in December, with a new production on the last day of the month of 78 barrels. One of the number came in dry. The following is the list:

WELLS COMPLETED DECEMBER 1884.

Farm. Operator.	Barrels.
A. Stevens, Lineman & McKevett No. 2	30
Clark, Mills & Mullin No. 2	18
Jersey, Borckman & Laney Bros No. 6	15
Rice, George Rice No. 7	15
G. Stevens, Mills & Mullen No. 2	dry
Wells	5
Production	78
Dry	1

RIGS UP AND BUILDING—WELLS DRILLING.

Farm. Operator.	Depth.
Delong, Macksburg Oil Co. No. 4	700
Smithson, " " No. 2	rig
Dutton, M. B. McManus No. 2	500
Atkinson, D. W. Clark & Co. No. 2	1100
" " " " 3	1200
Clinedinst, J. D. Wolfe No 1	1700
Davis, Porter & Gillmor No. 1	drilling
Coal Lands, Ohio Oil Co. No. 4	rig
" " " " 5	100
Kathary, Bailey & Katbary No. 1	1200
C. Agler, W. E. Decker & Sons No. 1	1200
" " " " 2	rig bldg
Dyer, Boden & Aiken No. 1	750
" " " " 2	250
" " " " 3	200
" " " " 4	500
" " " " 7	800
B. F. Atkinson, Stevens & Longfellow	rig bldg
" " "	1250
Burton, Clark & Spellacy No. 1	800
Rice, George Rice No. 3	1200
" " " 4	800
" " " 5	100
A. Perkins, George Rice	rig
Jersey, Borckman & Laney Bros No. 8	900
" " "	rig
Perkins, J C Lineman, No 2	1300
A Stevens, Lineman & McKevett No 3	100
" " " "	rig
Perkins, C J Garvey & Co No 4	1000
" " " 5	200
Hupp, Union Oil Co No 1	1300
Shilling, Syndicate Oil Co No 1	drilling
Merrow, " " " 1	1000
Gordon, " " " 1	1350
Devoll, Bradley & Lockwood No. 2	1300
Finch, Shirley & Green	rig bldg
Williams, Union Oil Co.	rig
" " "	rig bldg
L. Shilling, C. N. Payne	rig bldg
I. Shilling, Laing & Denman	rig
Shilling, John Denman	rig bldg
Warren, S. H. Bradley	rig
McLouth, John Weaver	rig
Morris, Mills & Austin	rig
Patten, Mills & Mullin	rig bldg
G. Stevens, Mills & Mullin	rig bldg
Agler, Garvey & Co	rig bldg
Rigs up and building	19
Wells Drilling	29
Total	48

On the last day of December there were 19 rigs up and building and 29 wells drilling, an increase of 15 over the previous month. The drill has been started at the Bradley Oil Co.'s well on the Phipps farm north-east of Elba. It will test the theory of an extension to the south-east from the main development.

It may be of interest to note who the parties are making up a number of the prominent companies operating in the Ohio district. The Ohio Oil Co., consists of M. C. Geider, George T. MacDonald, John Denman and James Laing. They have equal interests. James Laing, M. C. Geider, George T. MacDonald, Thomas Mills and Tim. Mullin, Jr. compose the Syndicate Oil Co. The interest is divided up into sixths. The Bradley Oil Co., operating on the Phipps farm, finds its component parts in James Laing, George T. McDonald, S. H. Bradley and Mr. Lockwood.

WHITE SAND POOLS.

Cherry Grove, Cooper and Balltown Pipe Line Runs to January 1st, 1885.

1882.	Ch'y Gr've.	Cooper.	Balltown.	Total.	Daily Av'ge
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
May	6,765	....	....	6,765	218
June	91,102	....	....	91,102	3,037
July	268,294	....	....	268,294	8,655
August	753,752	....	....	753,752	24,315
September	690,072	....	....	690,072	23,002
October	290,246	3,712	....	293,958	9,483
November	146,587	8,810	....	155,397	5,180
December	98,582	17,342	2,700	118,624	3,827
Total	2,345,400	29,864	2,700	2,377,964	9,706
1883.					
January	102,705	50,590	10,349	163,644	5,279
February	82,718	41,291	9,312	133,321	4,761
March	83,876	53,845	11,418	149,139	4,811
April	78,130	114,064	25,214	217,408	7,247
May	68,406	118,682	29,501	216,589	6,987
June	66,453	125,988	58,839	251,280	8,376
July	58,619	107,465	60,278	226,362	7,302
August	59,979	98,151	95,405	253,535	8,178
September	48,353	96,024	111,700	256,077	8,536
October	40,677	102,748	133,248	276,673	8,925
November	32,711	97,546	114,233	244,490	8,150
December	32,885	89,164	116,747	238,796	7,703
Total	755,512	1,095,558	776,244	2,627,314	7,198
1884.					
January	23,787	90,145	87,061	200,993	6,484
February	28,062	108,543	81,649	218,254	7,526
March	31,020	143,571	87,193	261,784	8,445
April	31,191	126,860	71,989	230,040	7,668
May	30,010	107,514	70,069	207,593	6,696
June	25,348	89,554	67,508	182,410	6,080
July	16,206	76,762	76,601	169,569	5,470
August	20,615	63,415	67,883	151,913	4,900
September	19,590	64,648	63,453	147.691	4,923
October	13,824	56,151	55,211	125,186	4,038
November	12,689	39,065	42,025	93,779	3,126
December	12,600	38,621	36,864	88,085	2,841
Total Jan. 1, '85	3,365,854	2,130,271	1,586,450	7,082,575	7,257

The above table gives the statistical history of the Cherry Grove, Cooper and Balltown fields from the time oil was first run in each district up to Jan. 1st, 1885. Cherry Grove has produced 3,365,854 barrels, Cooper 2,130,271 and Balltown 1,586,450 barrels. The daily average runs from the three fields during December were 2,841 barrels, a decrease of 285 barrels from the November figures. The daily average runs from the Cooper and Henry's Mills sections for December were 1,246 barrels, for November 1,302 and for October 1,811 barrels.

The Balltown field has a daily average of 1,189 for December, against 1,401 in November and 1,781 in October. Cherry Grove averaged 407 barrels a day in December and 423 in November.

BALDRIDGE AND WARDWELL.

The two new white sand fields, Baldridge and Wardwell, are enumerated in the list. The pipe line runs from these sections since April 1st, have been as follows:

Montb.	Baldridge Runs.	Daily Average.	Wardwell Runs.	Daily Average.
April	25,325	844	14,263	475
May	32,885	1,061	31,451	1.015
June	29,070	969	61,260	2,042
July	27,545	889	132,595	4,277
August	26,134	843	200,985	6,483
September	79,324	2,644	121,683	4,056
October	187,068	6,034	68,256	2,201
November	284,806	9,493	40,376	1,346
December	270,644	8,730	30,357	979

OFFICERS OF THE VARIOUS OIL EXCHANGES FOR 1885.

BRADFORD OIL EXCHANGE.

President, Charles L. Wheeler; Vice-President, Charles P. Stevenson; Treasurer, Winfield Scott; Secretary, Lucius E. Fuller.

Directors—William H. Powers, Harry A. Marlin, Asher B. Walker, J. Milton Fuller, Judson E. Haskell, William P. Thompson, Asa K. Darrow, James E. Cochran, Hezekiah P. Malone, Charles M. Dodge.

Arbitration Committee—Henry S. Davis, Eugene P. Whitcomb, Isaac G. Jackson, John A. Johnson, Barney Forst.

Conference Committee—Charles L. Wheeler, Joseph Seep, Hamlin L. Blackmarr.

Judge of Election—Frank A. Dailey.

Inspectors of Election—William E. Boyleston, John L. Tracy.

Floor Committee—C. R. Huntley, J. H. Conant, H. S. Tucker.

Auditing Committee—F. A. Dailey, J. L. Tracy, E. N. Hallock.

Finance Committee—J. E. Haskell, J. E. Cochran, W. H. Powers.

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During the last four months of the year 1884, the net stocks in the custody of all pipe lines were decreased 2,213,112 barrels.

THE PETROLEUM AGE.

DEVOTED TO THE

Interests of the Petroleum Trade.

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McMULLEN & SNELL.

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J. C. McMULLEN. A. L. SNELL.

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THE PRODUCING REGION.

ALLEGANY FIELD.

The closing month of the year 1884 disclosed the existence of almost a complete shut down in the Allegany field. Seven wells were finished in December, and of this number three came in dry. The new production from these wells aggregated 18 barrels, an insignificant amount in sustaining the decline of the old wells. During the past year 501 wells were completed in this field, 41 of which were dry, leaving 460 that produced oil. This addition to the producing wells failed to maintain the production as is illustrated by the pipe line runs and production report found elsewhere in this number of the AGE. The average daily daily pipe line runs from the Allegany field in December 1883 were 11,752 barrels, and for the same month in 1884, 8,193 barrels. During the past year the district produced 3,903,593-.63 barrels. Of the three dry holes discovered, two found locations remote from the field. In glancing over the district at the close of the year the territory which is to sustain the yield of the field does not appear in sight. The south Alma section affords a narrow streak of light territory which is partially perforated. Its possible maximum production is unimportant. On the first of the year there were five new rigs up and building, and 16 wells drilling, a total of 21 against 16 found December 1st. Throughout the district a large number of sucker rods was used in wells which had ceased to flow, and the old wells were coaxed as much as could be expected on a low market.

BRADFORD FIELD.

At the meeting of producers held in Bradford, January 6th, it was asserted that the outside world interested in oil, entertained erroneous ideas concerning the possibilities of the Bradford field. It was stated that the outsiders believed that the production of the Bradford district could be largely increased when it suited the pleasure of producers to start the drill. During the year just closed, the pipe line runs from the field have averaged a little more than 33,000 barrels per day. In the month of November they fell below 30,000 barrels. In various sections of the broadest and richest field ever discovered, there is room for the play of the drill when the market shall have found a higher range. At the head of Chipmunk Run, in the valley of the Four Mile and on Meeks and Indian Creeks, there is some territory which remains to be perforated. There is however but one prolific spot in sight which can be operated on a low market, and that is situated at the Cole Creek front. In this locality the Associated Producers Co., the Union Oil Co., Bayne & Fuller and Byrom & Rose, will soon altogether have nine "strings of tools" running. During the year just closed 601 wells were drilled in the Bradford district, and of this number 19 were dusters, leaving 582 which produced oil. Nearly 600 new wells failed to keep up the yield of the field and no mean amount of glycerine was used in the old wells. While the shut down movement was in progress a great many old wells were drilled deeper and shot, and their production was temporarily increased. While the field is not yet in the "throes of death," its life blood is steadily finding its way through the iron arteries to the sea. Seven wells were completed in December with a new production of 45 barrels. Since the count was made on the first of the year, Bayne & Fuller have completed a well on the south-eastern corner of 590 of the Bingham lands which is a failure. Up to the present writing one hundred quarts of glycerine have been exploded in the well and the use of sucker rods has failed to bring out anything but salt water. This non-producer shows that all the undrilled lands in the Cole Creek woods will not prove productive.

January 1st, there were one new rig up and 14 wells drilling in the Bradford district.

WARREN AND FOREST.

Except for a slight degree of activity, southwest of Tiona, the middle field was very quiet in December. But 25 wells were completed and six of these were dry. The 19 productive wells had a daily production of 118 barrels. New operations are represented by 9 new rigs and 13 drilling wells.

The wild - catter discouraged by numerous failures, is practically neglecting the counties of Warren and Forest, and rushing back to old Butler, where the gushers of Thorn Creek, sing sweet music to his ears. At present, there is but one well drilling in Forest county, that of

James Goff, on the Green farm, warrant 5,214, two miles south-west of Balltown. The last venture of Murphy, Hughes & Co. was located on warrant 3,667. It was put down below the sand level of the "Hoodoo" well on 3,668, but found no oil formation whatever. McMullen & Co. completed an eight barrel well on 3,195, north-east of the Emery wells in the Balltown field. Arters & Co.'s well on 3,164, Forest county was drilled over 2,000 feet without any results.

In Warren county, James Parker & Co. have a well shut down in a semi-mystified condition on the Fuller farm north of Kinzua village. It is reported that some Warren capitalists have bought an interest in the venture and are waiting to bring outside land holders to favorable terms. A dry hole was completed by Rhumor & Co. on Rogers island, near North Warren, in the older section of the Glade district.

The four great pebble sand pools of the middle field, up to January 1st, 1885, are credited by the pipe lines with the following production :

Field.	Barrels.
Cherry Grove	3,365,854
Cooper and Henry's Mills	2,130,271
Balltown	1,586,450
Wardwell	701,226
Total	7,783,801

Cherry Grove has been producing since May, 1882. Cooper since October, 1882. Balltown since December, 1882, and Wardwell since April, 1884.

THE LOWER COUNTRY.

The oil reporter traveling along Oil Creek, finds the narrow valley dotted here and there with relics of its former greatness, but sees little which reminds him of the onward move of the oil throng to-day. In the Oil Creek water basin and over the stretch of country between Oil Creek and the Allegheny River operations are quiet in the extreme. A few wells have been drilled in the vicinity of Rouseville, Rynd farm and at points further up the valley during the past year. But little interest is, however, taken in present developments by the residents, whose minds seem to be filled with the historical and legendary romance of the valley. On Pithole Creek preparations are being made to drill a test well early this year. Operations have declined with the production in the Cranberry district, and there is but little work doing or projected.

About Emlenton and across the Allegheny river at Six Points the shut-down was being carried out at the close of the year. Stretching away to the northeast from the Allegheny river for fifteen miles old Clarion makes a modest bid for recognition through two late strikes. Jacob Hahn, one of the pioneer operators in the district, found a fair producing well on the Wagner property, beyond the northeastern limits of the district. Oil City parties have lately sunk a test well on Cogsley Run, a branch of the East Sandy. The venture is situated four miles north of Edenburg and is estimated to have a capacity of five barrels. All pools and streaks which have been found in Clarion County outside of the regular belt, have been discovered at a cost far in excess of the returns. In the state geological survey of Clarion County it is estimated that the 7,000 acres of outlined territory of the district have produced an average of 2,000 barrels of oil to the acre.

Butler County, through its single pool on Thorn Creek, saw a production on the 13th of December of 14,264 barrels. The maximum production reported for the Clarion, Butler and Armstrong belts in the annals of oil was about 28,000 barrels. The McBride well, which started at 4,800 barrels or better, for the first 24 hours beginning December 13, is nearly a half mile in advance of the group of wells which make up the Thorn Creek pool. The Simpson well, located nearly a half mile north of the McBride well, and the latter give ample room for a streak or pool to pass between them. On the first of the year as many as fifteen test wells were under way, north, east, south-east and south of the McBride well. This well may be near the south-eastern end of the pool or along its southern edge, but until a number of the test wells pass below the sand level, predictions cannot be safely made on the future of the field. The success of the McBride well has given a stimulus to wild catting, and prospectors are leasing lands miles in advance of present developments. More pools may be struck, but the eager crowd who are willing to drill at random will be found with the "rabble of the unsuccessful."

Seventeen wells were completed in the Thorn Creek district during December, having on the last day of the month a production of 3,145 barrels. The Straight Run well, near Brownsdale, south of the old Baldridge pool, came in dry. Showalter Bros. & Hartman found a dry hole on the Pierce farm, near the town of Butler. January 1st there were 22 rigs up and building, and 37 wells drilling, making a total of 59. Twenty-two of these were of a wild-cat nature, being located on territory of an experimental nature.

Stocks abroad were reduced 536,215 barrels during the twelve months, ending December 20.

DECEMBER OPERATIONS.

THE ENTIRE REGION,—WELLS COMPLETED, WELLS DRILLING, AND RIGS UP AND BUILDING.

WELLS COMPLETED IN DECEMBER, 1884.

Allegany Field.

Lot. Owner.	Barrels.
Scio, lot 12, Thompson & Vesey	5
Alma, lot 66, Thos. Puller	5
do lot 55, Wannamaker	5
Wirt, lot 1, Geo McCoy No 3	dry
Clarksville, Zimmer, Clover & Co No 2	3
Allen twp, N. Y., Wigwam Oil Co	dry
Lycoming Co., Pa. (Trout Run) E Sawyer,	dry

Wells	7
Production	18
Dry	3

Bradford Field.

Kendal Creek. Irons, Perry V Carter	3
Kendall Creek, F A Moore, Boggs & Curtis	5
Four Mile, Van Campen, Wm M Brown	7
do Van Campen, Wm Doe No 5	8
do Widow Carrol, Malloch	10
do Stevens, Burns Bros	10
do ——, R G Cochran	2

Wells	7
Production	45
Dry	1

Warren and Forest.

Glade and other Towns.

North Warren, Island, Rhumor & Co	dry
Irvine. Brown Bros No 4	5

Wells completed	2
Production	5
Dry	1

Clarendon.

466, D Riddlesperger	6
463, Jones & Thompson	5
463, Mill r & Peck	5
466, J Smith & Son No 7	6
526, Emerson & Co No 4	6
557, R E Townsend No 5	6
557, E O'Donnell & Co No 2	6

Wells completed	7
Production	40
Dry	0

Tiona.

109, Allen O'Donnell & Co, No 2	6
165, Whitehill & Co No 2	6
203, Shoelkopf & Co No 1	5
204, Emerson & Farnsworth No 7	8
204, Sage, Kelley & Co	5
204, Spence & Morrison No 1	6
294, Booth, Bovaird & Seyfang No 6	6
204, do No 7	6
241, F. W. Winger, No 3	7
241, L Kraeer & Co No 1	10

Wells completed	10
Production	65
Dry	0

Balltown.

3195, M K McMullen & Co No 2	8

Wells completed	1
Production	8
Dry	0

Miscellaneous.

Forest, lot 3667, Murphy, Hughes & Co	dry
Forest, West Hickory, Wolcott & Co	dry
Warren, Spring Creek twp, lot 316, Windsor & Co	dry
" Limestone, lot 5245, Barnum & Leasure	dry
" Grand Valley, Milton Stewart	gas

Wells completed	5
Production	0
Dry	5

Lower Country.

Venango.

Diamond, Manning & Darr	2
McCalmont, S P McCalmont No 5	5
Kaufman, A P Dale	5
McClintock, Wm. Cormack	3
Rowley, Rowley & Taylor	dry
Lloyd Oil Co.'s Lands, Miles, Manson & Co	5

Wells	6
Production	20
Dry	1

Clarion.

Wagner, Jacob Hahn	10

Wells	1
Production	10

Butler and Armstrong.

Kesselman, Reep & Sutton	10
Ritzert, Showalter Bros & Hartman	10
Mulligan, H McGuire & Co	75
Muenster, Phillips Bros No 4	100
P Kelley, J B Wasson	10
McCrea, Steele & Ward	5
Kelly, Kelly & Black	15
Neff, Phillips Bros No 1, Est	15
Pierce. Showalter Bros & Co	dry
Hillman, Pittsburgh Oil Co	dry

Wells	10
Production	240
Dry	2

Thorn Creek.

Wallace, Fisher Oil Co No 15	100
Marshall, do No 8	2000
Marshall, Boyd & Armstrong, (U S Oil Co) No 1	1500
Bartley, Christie Bros No 3	10
do do No 6	20
do do No 8	15
do Phillips Bros No 6	10
do do No 7	30
do do No 8	175
do do No 9	175
Dodds, do No 2	10
do do No 3	25
Patterson, do No 1	15
McCormack, do	25
Kennedy, Ass'd Producers Co, (Simpson well)	35
Scully, Ass'd Producers Co, (McBride well)	1000
Douthett, Straight Run Oil Co	dry

Wells	17
Production	5145
Dry	1

DRILLING WELLS, RIGS UP AND BUILDING JAN. 1, 1885.

Allegany Field.

Scio.

Lot. Owner.	Depth.
2, Coast Oil Co No 31 (old)	rig
3, Coyle (old)	rig
4, McEnroe & Elliott No 4	900
4, Breckenridge (old)	rig
12, Allen & Morse (old)	rig
12, Griffin & Co No 7 (old)	rig
12, do No 10 (old)	rig
50, The Union Oil Co No 8 (old)	rig
50, do do No 9 (old)	rig
L Norton farm, A J Applebee No 3 (old)	rig
1, Pickering & Smith (foundation laid) (old)	rig

New rigs	0
Old rigs	10
Drilling	1
Total	11

Alma.

1, Phillips Bros No 14 (shut down) (old)	300
1, do No 15 (old)	rig
23, Vance & Horton (old)	3 rigs
24, New Milford Oil Co old)	2 rigs
24, W F Jones (old)	rig
24, S. G. Bayne, No 5 (old)	rig
38, Perrin & Young	800
38, do do	drilling
38, do do	rig bldg
68. O. L. Matthews	400
51, Sawyer & Co (old)	rig
55, W P Decker (old)	rig
88, Duke & Co (old)	rig
142, Dean & Smith No 5 (old)	rig

New rigs	1
Old rigs	13
Wells drilling	4
Total	17

Wirt.

1, Applebee Bros	rig
1, Early Bros	sand
1, Dewes & Donnell	drilling
12, Smith & Co	700
14, Lester & Co. (old)	rig
30, John Moran No. 2 (shut down and fishing	sand
33, Miner, Wellman & Fuller (old)	rig
43, (Wilcox farm) Allegany Gas Co	800
52, Allegany Gas Co (old)	rig
60, (I. Jordan farm) Lester, Jordan & Co	rig bldg
61, Deyoe farm, National Transit Co. (for gas)	drilling
Wheeler, McKenzie & Co (old)	rig

New rigs	2
Old rigs	4
Wells drilling	6
Total	12

Bolivar.

4, (Cole tract) Matson & Caldron (old)	rig
7, W & J Duke No 16 (old)	rig
7, Coast Oil Co No 20 (old)	rig
7, do No 42 (old)	rig
7, do No 45 (old)	rig
15. Fay (old)	rig
15, Sawyer & Co (old)	rig
23, F C Streeter & Co No 7 (old)	rig
23, Irvin & Morgan No 5 (old)	rig
30, Fritz & Lowry No 8 (old)	rig
30, do do No 10 (old)	rig
31, Smith & Co No 10 (old)	rig
Wetherby, Empire Gas Co (old)	rig
42, Parker	fishing sand

New rigs	0
Old rigs	13
Drilling	1
Total	14

Clarksville.

9, Heuston & Brecht No 4 (old)	rig
9, Merritt (old)	rig
Gesman, Wasson & Madison	400
McDougal, Clover & Co	rig
4, (Hubbard farm) Cuba Gas Co	drilling
10, Whipple Bros	rig
12, National Transit Co (for gas)	drilling

New rigs	2
Old rigs	2
Wells drilling	3
Total	7

Genesee.

8, I Willets (to the top of sand	drilling
8, do (to the top of sand)	drilling
14, Merwin (old)	rig
21. Empire Gas Co No 3 (old)	rig
22, I Willets No 13 (old)	rig
22, do No 14 (old)	rig
22, do No 15 (old)	rig
22, do (old)	rig
23, Hughes & Coughlin (old)	rig
23, Emery Oil Co No 16 (old)	rig
23, do do No 17 (old)	rig
Champlain, Emery Oil Co No 8 (old)	rig
29, William Cranston (old)	rig
31, H L McMullan & Co (old)	rig
38, S E Young (old)	rig
38. Empire Gas Co (old)	rig

New rigs	0
Old rigs and wells shut down	16
Drilling	0
Total	16

Miscellaneous.

Gains, Peck & Tait (old)	rig
Cayuga Co., N. Y., Owasco Valley Oil & Mining Co	800
Chemung Co,, N. Y., Ira Sawyer	drilling

New rigs	0
Old rigs	1
Wells drilling	2
Total	3

Bradford Field.

East and West Branches.

Scott Purchase, R. G. Taylor	800
Paton, McClure & Co (old)	rig
Clark, McCray Bros (old)	rig
Willis, do No 29 (shut down)	550
Glass, Barnsdall Bros (old)	rig
Dent, P C L & P Co No 64 (old)	rig
do do do No 65 (old)	rig
do Whitney & Wheeler No 40 (old)	rig
Mill lot, Whitney & Wheeler No 9 (old)	rig
Paul, Bayne, Fuller & Melvin No 5 (old)	rig
Wilson, West Branch Oil Co No 11 (old)	rig
Cary, Duncan No 4 (old)	rig
Mack, Fisher Brothers No 19 (old)	rig
Warrant 3,908, A. A. Hopkins	drilling
Warrant, 3,350, (R. George farm) W. H. Lesh & Co	sand
Bowen lands, Phillips & Co (old)	rig
Hinchey, McMurray Bros & Co No 6 (old)	rig
Prain, Brinton & Dale (old)	rig bldg
Buchanan, Snyder	drilling

Quintuple.

25, E Strong & Co (old)	rig
44, J W Humphrey (old)	rig
138, Campbell & Yonkins	drilling
220, Clark, Stearns & Co (old)	rig

New rigs	0
Old rigs and shut down	18
Drilling	4
Total	22

Kendall Creek.

Melvin, P C L & P Co No 85 (old)	rig
do do do No 86 (old)	rig
do do do No 87 (old)	rig
Borden, Urquhart & Lavens (old)	rig

Morton, Dan Clark No 3 (old) . . . . rig
do do do No 4 (old). . . . . rig
Dodge, Dodge & Carter (old) . . . . . rig
Sawyer City, A. W. Boyd . . . . . drilling
Willets, I Willets (old). . . . . rig

New rigs 0
Old rigs 8
Drilling 1
—
Total 9

Foster Brook.

E T Co, Boyne, Penny & Coleman No 11 (old) rig
do F L Blackmarr & Post No 5(old) rig
do Utter & Co (old) . . . . . rig
C B & H, Watson Oil Co No 33 (old) . rig
do do do No 34 (old) . rig
do Juter & Yager (old) . . . . . rig
do P W Bulger & Dana (fishing) sand
Evans purchase, Gibson & Sanderson, sand

New rigs 0
Old rigs 6
Well drilling 2
—
Total 8

Four Mile.

Van Campen Wm M Brown (old) . . . rig
do Merrill & Perrin (old) . . rig
do Geo Van Campen & Sons No 21 (old) . . . . . rig
do Geo Van Campen & Sons No 22 (old) . . . . . rig
do Cleveland Oil Co No 5 (old) rig
do do do No 6 (old) rig
do Wm Doe No 6 (old) . . rig
Waters, Griffin & Howard No 2 (old) . rig
C B & H, James Smith (old) . . . . . rig
Stevens, Burns Bros . . . . . drilling

New rigs 0
Old rigs 9
Drilling. 1
—
Total. 10

Indian Creek.

Barse, Union Oil Co No 36 (old) . . . . rig
North Branch, J D Downing & Co (old) 2 rigs
Keating, Forest Oil Co No 47 (old) . . rig
Hamlin, Miller & Odell No 4 (old) . . rig
Zimmer, Shear Bros (old) . . . . . 2 rigs
Morse, Morse & Brown (old) . . . . . rig
Miles Loop, Union Oil Co No 25 (old) rig

New rigs 0
Old rigs 9
Drilling 0
—
Total 9

Cole Creek.

Rew, Capt E Frawley (old) . . . . . rig
Bingham, lot 537 Union Oil Co No 31 (old) rig
do lot 550 do No 32 (old) rig
do lot 495 do No 3 (old) rig
do lot 579 do No 11 (old) rig
do lot 592 do No 12, drilling
do lot 594 Bayne & Fuller No. 1 (old) rig
do lot 590 do No 2, 1100
do —— Rose & Byrom No 1 . 1100
do lot 580 Associated Producers (old) rig
do lot 580 do (old) rig
do lot — Rose & McLeod . . . 200
do lot 593 T J Melvin No 2 . . . 950
do lot 593 T J Melvin No 3 . . 450
do lot 593 T J Melvin No 4 . . . rig

New rigs 1
Old rigs 8
Drilling 6
—
Total 15

Kinzua.

Bingham, Union Oil Co No 56 (old) . . rig
do Emery Oil CoNo 40 (old) . . rig

Kinzua Village.

New rigs 0
Old rigs 2
Drilling 0
—
Total 2

Warren and Forest.

Glade and Other Towns.

Fuller farm, Kinzua, Jas Parker & Co.. (shut down) 500
5542, (Elk twp) Schnur & Robbins (old) rig
Clark, S M Cogswell & Co, No 2 . . 400
Cobham, Union Oil Co No 13 (old) . . rig
Foster, Wesley Chambers No 1 (old) . rig
Rogers, Barnsdall Brothers No 14 (old) rig
do do No 15 (old) rig
do do No 16 (old) rig
———, W Bradley . . . . . drilling
———, Beecher Copeland . . . . . rig bldg
———, Sargent & Co 600

New rigs 1
Old rigs 6
Drilling 4
—
Total 11

Clarendon.

463, A Wolf & Co No 3 (old) . . . . . rig
54, D Beatty & Son No 36 (old) . . . rig
78. do do (old) . . . . . 2 rigs
463, Chambers & Co . . . . . rig bldg
464, Columbia Oil Co No 17 (old) . . . rig
106, Golden & Co (old) . . . . . rig
108, C H Filkins (old) . . . . . rig
495, W W Ballard No 4 (old) . . . . . rig
527, Goal Bros No 2 (old) . . . . . rig
527, do No 3 (old) . . . . . rig
527, do No 4 (old) . . . . . rig
561, F H Rockwell & Co No 13 (old) . rig
583, do No 14 (old) . rig
557. E O'Donnel & Co No 3 . . . . . rig bldg

New rigs , ... 2
Old rigs 13
Drilling. 0
—
Total 15

Tiona.

75, Fertig & Henne (shut down) . . . sand
59, do (shut down) . . . sand
104, Armor & Co No 3 . . . . . sand
109, J R Kuhn & Co No 6 600
109, J S Patterson No 31 (old) . . . . rig
109, Schonblom & Townsend No 8 (old) rig
110, Fertig & Henne (old) . . . . . 2 rigs
161, Helm & Mealey (old) . . . . . rig
161, do . . . . . sand
165, Whitehill & Co No 3 . . . . . rig
165, do do No 4 . . . . . rig
165, do do No 5 . . . . . rig bldg
203, Shœlkoff & Co No 2 200
204, Emerson & Farnsworth No 8 . . . rig
204, Sage, Kelly & Welsh . . . . . rig
204, W J Wood & Co No 1 . . . . . sand
204, Mandell Oil Co No 1 (fisbing) . . sand
204, Mandell Oil Co No 2 . . . . . rig
204, Booth, Bovaird & Seyfang No 8 . . rig
241, F W Winger, No 4 . . . . . rig
241, L Kraeer & Co No 2 200

New rigs 8
Old rigs 7
Drilling 7
—
Total 22

Cooper District.

Lot 458, Shank & Emery No 23 (old) . . rig

New rigs 0
Old rigs 1
Drilling 0
—
Total 1

Balltown.

3194, Porcupine Oil Co No 21 (old) . . rig
3195, Emery, Agnew & Co No 6 (old). . rig
3195, do do No 7 (old) . rig
4821, Balltown Oil Co No 23 (old) . . . rig
4821, do do No 24 (old) . . . rig
4821, do do No 25 (old(. . . rig
4792, Howe Oil Co No 17 (old) . . . . rig
4792, do do No 18 (old) . . . . rig
5215, May, Kelly & Grandin No 28 (shut down) sand
5215, do do No 29(old) rig

New rigs 0
Old rigs and shut down 10
Drilling 0
—
Total 10

Miscellaneous.

Forest, 5214, J Goff & Co 100
do 3164, J M Arters (fishing) . . near sand
Warren, Youngsville, McKinney farm, Brokenstraw twp., Calhoun & Co, (shut down) . 1000
Warren, Grand Valley, Milton Stewart & Co . . . . . drilling
Warren, Deerfield twp, (Conklin Run) W W Hague (old) rig

New rigs 0
Old rigs 1
Drilling 4
—
Total 5

Lower Country

Venango.

Morrison, Fisher Bros . . . . . rig
Cottage Hill, Hasson & Co 500
Button, J B Smithman . . . . . rig
Diamond, Loots . . . . . rig
Galbreath, Cramer & Co. . . . . drilling
McCalmont, S P McCalmont No 6 (old(rig
do do No 7 (old) rig
Blood, William Baker No 3 . . . . . rig
Pithole Creek, Sam. Hancock . . . . rig bldg
Gregg, Benninghoff . . . . . drilling
O Lain, Playford & Co . . . . . rig
Hill (near Salina) Wood & Walker . . drilling
Pine Grove. Speeckly . . . . . drilling

Vicinity Emlenton.

Turner, Sam. Turner 800
S. P McCalmont, J Wallrabenstein . . 200
A M Crawford, Sherry & Knight . . . 200
H. Leslie, T Dutton 300
Robinson, Gorman 1000
McCullough. Porterfield & McCombs . 750
Ritchie, Eben Crawford (old) . . . . . rig
David Crawford, Thomas & Jamison . 100

New Rigs 6
Old Rigs 3
Wells drilling 12
—
Total 21

Clarion.

Wagner, Jacob Hahn . . . . . rig
Sweitzer, Bartlett & Co . . . . . drilling
Amsler, Amsler & Co (old) . . . . . rig
Ashland Twp, Maxwell & Laughner . drilling

New rigs 1
Old rigs 1
Drilling 2
—
Total 4

Butler and Armstrong—Various Sections.

Clay, Queen Bros 450
Rowley, Taylor & Rowley 1000
Gallagher, Hunter & Cummings . . . 600
Young, J W McKee No 1 . . . . . rig
Kelley, J W McKee No 3 . . . . . rig bldg
Graveyard lot, W A Kelley, ... rig bldg
Sheakley, M Sheakley 900
Wilas, Wilson & Smith 500
Bredin, Rigney & Co . . . . . rig
L Witt, Greenlee & Russell 100
do Dale, Larkin & Co . . . . . rig bldg
Mulligan, H McGuire & Co, ... rig
Rider, M Bowers (fishing) 1200

Thorn Creek.

Wallace, Fisher Oil Co., No 16 1300
do do No 17 200
Marshall do No 4 1400
do do No 5 . . . 1500
do do No 7 400
do do No 9 200
do do No 10 200
do do No 11 300
ko do No 12 100
do do No 13 . . . . rig
do do No 15 . . . . rig
do do No 17 . . . . rig
do Armstrong, Boyd&Semple No 3 sand
do do do No 4 rig
do Greenlee & Co No 2 1300
do Lappe & Co No 1 . . . . . sand
do do No 2 1250
Bartley, Christie Bros No 5 250
do do No 7 1400
do Phillips Bros No 10 1450
do do No 11 1200
Dodds do No 4 . . . . . sand
do do No 5 1650
do do No 6 100
McCandless do No 2 (fisbing) . 650
do do No 3 800
do do No 4 900
Mushrush do No 1 300
do do No 2 . . . . . rig
do do No 3 . . . . . rig bldg
Kennedy, Assoc'd Producers Co No 2 100
do do do ——rig bldg
Scully & Sutton, (McBride Purchase) Ass'd Prod'rs Co No 1 rig
do do do No 2 rig
Scully, do do . . rig bldg
Buhl, do do . . rig
Girard, Alshouse . . . . . rig bldg
Brackney, Charles L Jones . . . . . rig bldg
Thos Graham, Baldridge Oil Co . . . rig
Scully, Fisher Oil Co . . . . . rig bldg
Lavery, Connors & Fishel . . . . . rig
do J H Markham . . . . . rig
Bredin, Miller & Co . . . . . rig
Alexander Welsh, Christy Bros . . . . rig
Wm Kennedy, S W Harley, agent . . rig bldg
Kersting, Sutton & Harper . . . . . rig bldg
D McLaughlin, Clark, Reep & Sutton . 100
Mangel, M Murphy . . . . . rig
R Fisher, Connors, Fishel & McJunkin 1350
Maharg, Boyd & Armstrong 700
Crow, Sheidemantle 400
Robb, McMullen 900
Manny, McKelvey 1400
Critchlow, Reed 1200
Reibold, Painter & Co 1100
Leiblar, Phillips Bros 1000
Marburger, Boyd & Armstrong 50
Kennedy, Babbitt & Co . . . . . sand

New Rigs 28
Old Rigs . . . . . —
Wells drilling 44
—
Total 72

FIELD OPERATIONS SUMMARIZED.

Wells Completed, With the Estimated Production on the Last Day of the Month.

ALLEGANY.

Division of Field.	December, 1884. Wells.	Prod'n.	Dry.	November, 1884. Wells.	Prod'n.	Dry.
Scio	1	5	0	1	6	0
Alma	2	10	0	2	15	0
Wirt	1	0	1	1	0	1
Bolivar	0	0	0	3	26	0
Clarksville	1	3	0	3	2	2
Genesee	0	0	0	0	0	0
Miscellaneous	2	0	2	1	0	1
Total	7	18	3	11	49	4

BRADFORD FIELD.

Division of Field.	December. Wells.	Prod'n.	Dry.	November. Wells.	Prod'n.	Dry.
E. & W. Branches	1	5	0	2	6	1
Kendall Creek	1	3	0	0	0	0
Foster Brook	0	0	0	1	5	0
Four Mile	5	37	0	2	15	0
Indian&Meeks Cr'ks	0	0	0	1	5	0
Cole Creek	.0	0	0	4	200	0
Kinzua	0	0	0	0	0	0
Total	7	45	1	10	231	1

WARREN AND FOREST.

District.	December. Wells.	Prod'n.	Dry.	November. Wells.	Prod'n.	Dry.
Glade	2	5	1	8	23	4
Clarendon	7	40	0	4	16	1
Tiona	10	65	0	6	37	1
Cooper	0	0	0	1	0	1
Balltown	1	8	0	1	0	1
Miscellaneous	5	0	5	7	0	7
Total	25	118	6	27	76	15

LOWER COUNTRY.

District.	December. Wells.	Prod'n.	Dry.	November. Wells.	Prod'n.	Dry.
Venango	6	29	1	8	80	1
Clarion	1	16	1	2	0	2
Butler and Armstrong	27	5385	3	28	6341	3
Total	34	5415	5	38	6421	6

GRAND SUMMARY.

District.	December. Wells.	Prod'n.	Dry.	November. Wells.	Prod'n.	Dry.
Allegany	7	18	3	11	49	4
Bradford	1	45	0	10	231	1
Warren and Forest	25	118	6	27	76	15
Lower Field	34	5415	5	38	6421	6
December Total	72	5596	14	86	6777	26
Nov. Total	86	6777	26			
Difference	12	1181	12			

Rigs Up and Building.—Wells Drilling.

ALLEGANY FIELD.

Division of Field	Jan. 1, 1885. New Rigs	Old Rigs.	Drilling.	Total.	Dec. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Scio	5	10	1	11	0	11	2	13
Alma	1	13	4	18	1	13	2	16
Wirt	2	4	6	12	3	4	5	12
Bolivar	0	13	1	14	0	12	1	13
Clarksville	2	2	2	6	0	3	1	4
Genesee	0	16	0	16	0	16	0	16
Miscellaneous	0	1	2	3	0	1	0	1
Total	5	59	16	80	4	60	11	75

BRADFORD FIELD.

Division of Field.	Jan. 1, 1885. New Rigs	Old Rigs.	Drilling.	Total.	Dec. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
E. & W. Branches	0	18	4	22	1	17	2	20
Kendall Creek	0	8	1	9	1	8	1	10
Foster Brook	0	6	2	8	0	6	2	8
Four Mile	0	9	1	10	1	8	4	13
Indian Creek	0	9	0	9	0	9	0	9
Cole Creek	1	8	6	15	5	5	0	10
Kinzua	0	2	0	2	0	3	0	3
Miscellaneous	0	0	0	0	0	0	0	0
Total	1	60	14	75	8	56	9	73

WARREN AND FOREST.

Division of Field.	Jan. 1, 1885. New Rigs	Old Rigs.	Drilling.	Total.	Dec. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Glade	1	6	4	11	2	8	2	12
Clarendon	2	13	0	15	2	14	4	20
Tiona	8	7	7	22	4	8	9	21
Cooper	0	1	0	1	0	1	0	1
Balltown	0	10	0	10	0	8	1	9
Miscellaneous	0	1	4	5	1	1	5	7
Total	11	38	15	64	9	40	21	70

LOWER COUNTRY.

Division of Field.	Jan. 1, 1885. New Rigs	Old Rigs.	Drilling.	Total.	Dec. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Venango	7	3	11	21	2	4	5	11
Clarion	2	1	1	4	0	0	0	0
Butler & Armstrong	28	0	44	72	10	2	39	51
Total	37	4	56	97	12	6	44	62

GRAND SUMMARY.

Field.	Jan. 1, 1885. New Rigs	Old Rigs.	Drilling.	Total.	Dec. 1, 1884. New Rigs	Old Rigs.	Drilling.	Total.
Allegany	5	59	16	80	4	60	11	75
Bradford	1	60	14	75	8	56	9	73
Warren & Forest	11	38	15	64	9	40	21	70
Lower Country	37	4	56	97	12	6	44	62
Total Jan. 1, '85	54	161	101	316	33	162	85	280
Total Dec. 1	33	162	85	280				
Difference	21	1	16	36				

CHRONICLES OF THORN CREEK FOR DECEMBER.

The progress of the Thorn Creek development in Butler county, to the 15th of December, will be found on record in the December AGE. On that day, the McBride well, now the Associated Producers Co.'s No. 1 on the Scully, was flowing 100 barrels an hour, and 31 wells had an estimated output of 10,972 barrels.

December 16th, Fisher No. 8, on the Marshall begins flowing. Torpedo supposed to have exploded. Makes 50 barrels the first hour and 80 the second. Phillips No. 9, on Bartley has produced 45 barrels since December 12th. Phillips No. 8, on Bartley 12 feet in sand and showing light. Phillips No. 3, on the Dodds farm drilling in poor sand.

December 17. Casing collapses at Fisher No. 8, but still making 50 barrels an hour. McBride 96 barrels an hour.

December 18. The Associated Producers Co. purchase McBride & Campbell's remaining half interest in the Sutton and Scully property, fifty acres of the Christie Bros.' lease east of the McBride well, two-thirds of the H. Buhl farm, and Phillips & Simpson's lease of the J. Q. A. Kennedy tract.

December 19. While thawing a water line to Fisher No. 4, on the Marshall, the tanks at Fisher No. 8 take fire, and the well is burned. Armstrong No. 3, drilling near sand, and Lappe

& Co.'s drilling well are also badly crippled by the fire. Fisher Oil Co.'s loss, $10,000.

December 20. Fisher No. 4 and Lappe drilling well out of danger from the fire. Christie No. 3, on Bartley, drilled through the sand with poor showing. Morning's guage: McBride, 82 bbls; Conners No. 1 and 2, 69 bbls; Boyd, 34 bbls.; Fisher No. 1, 30 bbls.; No. 3, 17 bbls.; No. 6, 11 bbls., and Gibson No. 2, 20 bbls. per hour. Field gauge, 8532 barrels. S. M. Ross, of Warren, contracts to extinguish fire at Fisher No. 8, for $1.000.

December 22. Fisher No. 3 on Marshall and Phillips No. 5 on the Bartley stop flowing. Babbitt & Co.'s well on the upper Kennedy, 25 feet in poor sand with no oil. Phillips No. 8 begins to produce and makes 100 barrels past twenty-four hours.

December 24. Christie No. 3 rigging up to pump. Phillips No, 2 on Dodds, through sand and very light.

December 26. Fire extinguished at Fisher No. 8, at 5 p. m. Well made 180 barrels first hour, thereafter. Lappe No. 1, 38 feet in sand, showing no oil.

December 27. Fisher No. 8 doing 130 bbls. and McBride 63 bbls. an hour. Field gauges, 8892 barrels.

December 28. Fisher No. 6 is making only 4 bbls. an hour. Babbitt & Co.'s well on the upper Kennedy, a failure in the lower rock, but will make a small producer from the "100-foot sand." Lappe well shot but makes no response.

December 30. Phillips No. 9, on the Bartley farm shot and makes one flow.

December 31. Fisher No. 8 making 96; McBride 47, and Boyd 85 bbls. an hour.

January 3. Production 6,656 barrels. McBride 38 bbls.; Fisher 8,75; Boyd 65 bbls. an hour. Fisher No. 4, on Marshall in stray sand.

January 6. Fisher No. 5, 30 feet in inferior sand.

January 7. Babbitt, on Kennedy and Lappe & Co. on Marshall, pumping salt-water. Phillips No. 5, on Dodds, strikes the sand. Christie No. 3, on Bartley, through the sand three weeks ago, shot to-day and bridged over.

January 8. Production 5,670 bbls. by scouts gauges.

January 9. Fisher No. 5, on Marshall through sand, showing very little oil.

January 10. Production 5,610 bbls. Fisher No. 16, on Wallace through sand, shows for a moderate well. Fisher No. 5, Marshall, through sand will be pumped before shooting. Phillips No. 4, Dodds, through sand and showing poorly. Babbitt well on Kennedy, 11 bbls. a day from 100 foot sand. Phillips No. 10, on Bartley 13 bbls. an hour.

January 12. Forty three wells now completed in Thorn Creek district. Total production 5,340 barrels. Three wells, the Boyd No. 1, Fisher No. 8, and the McBride are producing 3,792 bbls. leaving 1,548 bbls. to be produced by forty wells, and of this number, eight are doing nothing at all.

HOURLY GAUGES SHOWING DECLINE OF PRINCIPAL THORN CREEK WELLS.

DATE.	Fisher, No. 1.	Fisher, No. 3.	Fisher, No. 6.	Fisher, No. 8.	Phillips, No. 5.	Conners & Fisher's Nos. 1-2.	Greenlee, No. 1.	Boyd, No. 1.	McBride.
Dec. 3, 1884	60	49	28	. .	20	81	0	. .	. .
Dec. 6,	58	46	28	. .	15	75	0	. .	. .
Dec. 8,	50	44	23	. .	15	59	7	. .	. .
Dec. 11,	41	40	17	. .	21	56	7	150	. .
Dec. 13,	34	32	18	. .	20	68	72	90	200
Dec. 15,	34	31	18	. .	13	58	51	80	100
Dec. 18,	35	25	14	42	12	95	46	58	85
Dec. 20,	30	17	11	Burning	0	69	34	42	82
Dec. 24,	30	0	8	"	0	31	32	16	54
Dec. 29,	20	0	0	120	0	28	22	0	55
Dec. 31,	17	0	6	96	0	35	6	80	45
Jan. 2, 1885	0	0	6	66	0	12	20	80	37
Jan. 5,	0	0	0	78	0	. .	. .	66	42
Jan. 6,	0	0	0	72	20	. .	. .	51	33
Jan. 8,	0	0	0	60	15	. .	. .	46	30
Jan. 10,	. .	. .	. .	80	. .	. .	. .	50	33
Jan. 13,	. .	. .	. .	68	. .	. .	. .	51	30

The scouts' gauges of the Thorn Creek wells, for each day of November and December, were as follows:

	November.	December.
1	9,364	7,850
2	8.849	6,225
3	8,218	6,968
4	8,977	6,691
5	8,248	5,989
6	7,144	6,319
7	6,982	6,106
8	6,888	5,768
9	7,046	5,766
10	7,043	5,676
11	6,418	8,952
12	6,439	7,689
13	7,046	14,264
14	10,486	11,200
15	15,445	10,972
16	13,436	10,217
17	11,674	11,080
18	11,035	11,259
19	9,977	9,715
20	10,221	8,532
21	12,651	7,500
22	10,681	7,016
23	10,500	7,140
24	9,225	6,402
25	9,989	6,300
26	8,808	7,140
27	9,188	8,892
28	8,818	8,000
29	8,280	7,512
30	7,980	6,721
31	. . .	8,350
Total	277,056	248,211
Daily Average	9,235	8,007

THE AVERAGE PRICE OF CRUDE.

The following table gives the average price of crude certificates, on the floor of the Bradford Oil Exchange, since March 1, 1879:

	1879	1880	1881	1882	1883	1884
January	. .	110 1-5	95	83	92¾	111⅓
February	. .	103¼	89¼	85¼	101	104⅜
March	86	89	82⅞	80⅞	97½	100⅛
April	78⅜	76⅝	84⅛	78¼	92⅝	94
May	73½	80¼	81½	70	99⅜	85½
June	68⅜	100¼	81	54½	117¼	68¾
July	69⅞	101¼	76½	57⅝	108	63½
August	67¼	90¾	78⅔	58⅔	108⅔	81 1-5
September	69¼	95½	92¼	71⅓	112½	78
October	88⅛	96¾	92¾	93⅝	111⅛	71
November	105⅜	91¼	82⅓	114¾	114 4-5	72½
December	113¼	92⅜	83¾	95¼	114⅓	74⅜

STOCKS ABROAD.

Reports of stocks in London, Trieste, and the seven principal continental ports, are summarized in the following statement:

Stocks Afloat and Ashore.	Dec. 20, 1884. Barrels.	Nov. 22, 1884. Barrels.
London	184,358	201,163
Trieste	55,244	40,839
Seven Continental Ports	1,322,606	1,485,288
Total Stocks afloat and ashore	1,562,208	1,727,290
Decrease in Stocks since November 22	165,082	

A detailed statistical table giving the stocks on hand, the stocks in vessels on the ocean, and the amount unloading from the vessels at the different ports, is appended, which shows at a glance the condition of affairs abroad and the increase or decrease as compared with the corresponding period of 1883. The shipments represent the amount of oil going to the interior of Europe from the seaports.

STOCKS IN FOREIGN PORTS DECEMBER 20, 1884.

	Stocks W'k end'g Dec. 20.		Stocks Afloat W'k end'g Dec. 20.		W'k end'g Dec. 20. Loading.		Grand Total Stocks Afloat & Loading.		Receipts. From July 1.		Shipments From July 1.	
	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.	1883. Barrels.	1884. Barrels.
London	393,901	110,805	45,339	42,553	23,000	31,000	462,240	184,358	330,940	204,067	310,699	326,671
Trieste	9,309	19,948	65,234	16,296	10,000	19,000	84,543	55,244	95,399	58,813	105,222	82,870
Bremen	796,716	573,955	86,565	17,464	46,500	51,000	929,781	642,419	396,088	338,579	493,999	561,205
Hamburg	125,278	141,411	22,598	22,454	6,000	24,800	153,876	188,665	431,475	649,430	639,304	680,564
Antwerp	226,439	206,291	24,595	36,951	31,000	34,500	282,034	277,742	518,654	672,970	502,593	592,649
Rotterdam	47,478	57,740	15,063	7,182	...	16,000	62,541	80,922	101,521	132,936	129,229	133,140
Amsterdam	28,920	37,814	14,779	6,936	...	6,000	43,699	50,750	132,724	132,444	140,642	137,640
Stettin	61,720	58,138	...	...	...	...	61,720	58,138	168,439	198,694	175,060	182,174
Danzig	17,389	20,709	...	3,261	...	...	17,389	23,970	54,647	59,154	48,943	47,384
Total	1,303,940	1,096,058	163,600	94,248	83,500	132,300	1,551,040	1,322,606	1,803,548	2,184,207	2,129,770	2,334,756

	1881.	1882.	1883.	1884.
Total stocks exclusive Trieste	1,037,110	1,465,704	1,697,841	1,206,863
Total afloat, exclusive Trieste	240,934	265,149	208,939	136,801
Total loading, exclusive Danzig, London and Trieste	187,600	109,000	106,500	163,300
Total	1,465,644	1,839,853	2,013,280	1,506,964
Afloat and loading for direct Continental Ports	....	3,100	93,500	18,200
" " " Baltic Sea, exclusive Stettin and Danzig	....	....	....	2,900
" " " English harbors, exclusive London	137,500	68,000	68,500	53,500
Grand Total	1,603,144	1,910,953	2,175,280	1,581,564

CRUDE QUOTATIONS FOR DECEMBER, 1884.

Day of Week.	Day of Month.	Bradford. Opened.	Bradford. Highest.	Bradford. Lowest.	Bradford. Closed.	Oil City. Opened.	Oil City. Highest.	Oil City. Lowest.	Oil City. Closed.	New York. Opened.	New York. Highest.	New York. Lowest.	New York. Closed.	Pittsburgh. Opened.	Pittsburgh. Highest.	Pittsburgh. Lowest.	Pittsburgh. Closed.
M	1	79½	79¾	76¾	76⅞	80	80	76⅝	76¾	79	79⅛	76¾	76⅞	79½	79½	76⅝	76¾
T	2	78	80⅜	77⅞	79	78	80¾	78	78⅞	77¾	80½	77¾	78⅞	78	80½	77⅝	79
W	3	78	78⅞	77⅛	78⅜	77	78¾	77	78½	78½	78¾	77⅜	78⅜	78¾	78⅞	77½	78½
T	4	78½	78½	77⅜	78⅛	78½	78½	77¼	77⅞	78⅝	78¾	77⅜	77⅞	78¾	78¾	77¼	78
F	5	78	78½	72	72⅛	78	78¼	71¾	72⅛	78½	78½	71⅞	72⅛	78⅜	78½	72	72¼
S	6	72	74¼	71½	73⅛	72	74⅜	71⅜	73⅛	72⅛	77¼	71½	72⅞	72½	74¼	71⅝	73⅛
M	8	73⅜	74½	72½	74⅛	73¾	74½	72⅜	73⅞	73½	74⅝	72⅛	73¾	73¾	74¼	72⅜	73⅞
T	9	74	74	72⅞	73	73¾	73¾	72⅞	73¼	73¼	73⅝	72⅞	73⅛	73½	73⅝	72¾	73⅛
W	10	73	73¼	71⅜	71⅜	73	73⅛	71½	71⅞	73	73⅛	71⅜	71½	73	73⅛	71⅜	71⅜
T	11	70¾	73⅜	70¼	73¼	70⅞	73¼	70¼	73⅛	70¼	73½	70	73¼	70½	73¼	72½	73⅛
F	12	73	73	70⅞	72⅜	73	73⅜	71	72⅜	73½	73½	71⅛	72¾	72⅞	73¼	71⅛	72¼
S	13	68	72⅞	67¾	72¼	69	72¾	67	72⅛	69	72¾	67½	72⅛	68	72½	68	72⅛
M	15	73	73⅜	71⅜	71⅞	73	73¼	71⅜	72	72½	73⅛	71⅜	72	72¾	73⅛	71½	72
T	16	71¾	73⅞	71½	73⅜	71⅝	73⅞	71⅝	73⅝	71½	73⅞	71½	73⅜	71½	73¾	71½	73⅜
W	17	73⅜	73⅜	72⅛	72⅝	74	74	72⅛	72¾	73½	73½	72¼	72⅝	73½	73⅝	72¼	72½
T	18	72½	74	72¼	74	72½	74⅜	72½	74⅜	72½	74⅛	72½	74	72½	74⅞	72⅛	74
F	19	74½	78½	74½	76¼	74½	78⅜	74½	76⅜	74⅝	78⅜	74½	76¼	74½	78¼	74½	76⅛
S	20	76½	77¼	75½	75⅞	77	77¼	75½	75¾	77⅛	77¼	75⅝	75⅞	77	77½	75⅝	75⅞
M	22	76½	76¾	74⅜	74⅝	76	76½	74¼	74¾	76⅛	76¼	74⅜	74⅝	76	76¼	74⅜	74⅝
T	23	74½	76	74½	75⅝	74¾	76	74½	75⅞	74⅞	76	74⅜	75⅝	74¾	76	74½	75⅝
W	24	75¾	76	74⅝	75⅛	75⅞	76	74⅝	75⅛	76⅛	76⅛	74½	75¼	76	76	74½	75⅛
T	25	Christmas.				HOLIDAY.				HOLIDAY.				HOLIDAY.			
F	26	74¾	74⅞	72⅞	73	75	75	73	73	75	75	73⅛	73⅛	74¾	74⅞	73	73
S	27	72¾	73⅜	72⅜	73¼	73	73⅜	72½	73⅜	72⅞	73½	72½	73⅜	72¾	73⅜	72½	73⅛
M	29	73½	75⅛	73⅜	73¾	73½	75⅛	72⅝	73⅞	73¾	75⅛	73¼	74	73⅝	75⅛	73⅝	73⅞
T	30	74¼	74⅞	73⅝	74	74⅜	75	73⅞	74	74⅜	75	73¾	74	74⅛	74⅞	73⅞	74
W	31	73⅞	74½	73½	74¼	73¾	74⅜	73½	74⅜	73⅞	74½	73¾	74¼	73¾	74⅜	73⅝	74⅛

OFFICIAL STATEMENT, EXPORTS OF PETROLEUM, NOVEMBER, 1884.

BY JOSEPH NIMMO, JR., CHIEF OF BUREAU OF STATISTICS, WASHINGTON, D. C., JANUARY 5, 1885.

CUSTOMS DISTRICT.	MINERAL CRUDE. Gallons.	MINERAL CRUDE. Dollars.	NAPHTHAS. Gallons.	NAPHTHAS. Dollars.	ILLUMINATING. Gallons.	ILLUMINATING. Dollars.	LUBRICATING AND PARAFFINE OIL. Gallons.	LUBRICATING AND PARAFFINE OIL. Dollars.	RESIDUUM. Gallons.	RESIDUUM. Dollars.	TOTAL. Gallons.	TOTAL. Dollars.
Boston & Charlestown, Mass	.....	....	.....	....	363,349	38,908	26'810	6,474	.....	....	390,159	45,382
New York, N. Y.	4,597,395	349,857	656,097	54,680	25,385,337	2,272,171	927,426	175,079	168,168	10,416	31,734,423	2,862,203
Philadelphia, Pa.	4,483,154	298,315	1,105,802	78,703	11,288,614	947,022	39,652	3,842	.....	....	16,917,222	1,327,882
Baltimore, Md.	.....	....	.....	....	1,339,343	108,807	15,866	3,108	.....	....	1,355,209	111,915
San Francisco, Cal.	.....	....	20,400	631	35,030	8,118	821	603	.....	...	38,251	9,352
All other districts	.....	....	3,611	449	203,641	24,986	4,083	1,722	294	30	211,629	27,187
Total for Nov., 1884	9,080,549	648,172	1,767,910	134,463	38,615,314	3,400,012	1,014,658	190,828	168,462	10,446	50,646,893	4,383,921
Total for Nov., 1883	5,842,158	460,142	1,904,712	123,890	37,621,116	3,387,459	1,026,632	200,457	561,582	40,270	46,956,200	4,212,218
Total for 11 months ended Nov. 30, 1884	71,015,403	5,489,094	11,868,275	990,419	396,994,549	36,182,440	10,596,532	2,153,708	4,868,052	305,003	495,342,811	45,120,664
Total for 11 months ended Nov. 30, 1883	53,607,413	4,018,348	16,024,268	1,113,638	410,513,392	36,554,763	9,257,834	2,010,879	6,156,780	438,932	495,559,687	44,136,560

SUMMARY FOR 1884.

The year just closed, has been a disastrous one for the petroleum producer who based his calculations of future profits on the price of crude, for the latter part of 1883, and the first three months of 1884. The beginning of the year witnessed the addition of a considerable stretch of prolific territory to the Cooper district, by the discovery of a connecting belt through Henry's Mills to the small development at Lower Sheffield. The Balltown field, was extended to the south-west and north-east, but its greatest production for a single month was made in October of the preceding year. Wardwell began to attract attention near the close of 1883, but the past summer witnessed its rapid rise and speedy fall. The Baldridge field in Butler county, with its Thorn Creek annex, dates its importance as a factor in the problem of production with August 29th, when the Phillips well on the Bartley farm began its remarkable career. This marvelous well, which made the unparalleled record of 108,000 barrels of crude in 95 days proved the forerunner of a series of short lived gushers, which has absorbed the attention of the trade to the exclusion of all other topics. The Buckeye state has also thrust forward a modest claim for consideration, in the shape of the Macksburg field.

The older fields of Bradford and Allegany, though still producing two-thirds of the petroleum supply of the United States, have been gradually waning all through the year. And the completion of 1,102 new wells, within their limits added to the use of a prodigious amount of nitroglycerine, has not been effectual in quickening their ebbing flow. The two fields together are still making about 39,000 barrels a day, but the increasing expense of keeping up the vast number of 17,000 wells, leaves no margin of profit to the small well owner, at the ruling market quotations.

The year 1884 will also be memorable for the panic of May 16, when the failure of the Marine Bank of New York started a series of failures, that brought about a decline in the price of crude certificates of 38½ cents in less than ten days. The ruin of the Penn Bank at Pittsburgh, the failures of James H. Keene, the New York Metropolitan Bank, Fish & Hatch, Hatch & Foote, Dimmick & Co., and other firms followed in quick succession the downfall of Grant & Ward and a depression in the price of crude followed, which has not since been recovered.

In the following tables the results of the year's business are concisely summarized:

STOCKS IN THE REGION.

	Barrels.
Net Stocks Custody Pipe Lines. Dec. 31, 1884,	36,872,892
" " " Dec. 31, 1883.	35,715,565
Increase,	1,157,327
Daily Average Increase 1884,	3,162
" " 1883,	3,782

During the eight first months of the present year the stocks increased 3,370,439,27 barrels. In April, the National Transit Co., which had previously purchased the United Pipe Lines, transferred the crude that had accumulated in its possession and which had not yet appeared in any published statement. The amount of oil thus added to the account of stocks in the region was 1,505,804 barrels. The last four months of the year there was a diminution in the net stocks of 2,213,111.60 barrels.

PIPE LINE RUNS.

	Barrels.
Total Pipe Line Runs for the year 1884,	23,584,860
" " " " 1883,	24,383,058
Decrease,	798.198
Daily Average Runs for 1884,	64,439
" " 1883,	66,803
Average decrease per diem,	2,364
Daily Average Runs for 1882,	86,713

SHIPMENTS FROM THE REGION.

	Barrels.
Total shipments from Oil Region, 1884,	23,502,130
" " " 1883,	21,967,510
Increase in shipments,	1,534,620
Daily Average Shipments for 1884,	64,211
" " 1883,	60,185
Average Increase per diem,	4,026
Daily Average Shipments for 1882	61,024

RUNS AND SHIPMENTS COMPARED.

	Barrels.
Total Runs for 1884,	23,584,860
" Shipments for 1884,	23,502,130
Difference	82,730

The above difference which is the excess of the runs over the shipments, represents the actual increase of the gross stocks in the region. But as shown above, the net stocks were increased 1,157,327 barrels. The apparent discrepancy is readily accounted for, in the sediment and surplus account, and the addition of 1,505,804 barrels to the net stocks when the sale of the United Pipe Lines occurred. This amount appeared in the statements under the head of shipments of the years previous. A slight reduction of stocks was also effected by the fire losses during the year.

FIRE LOSS 1884.

Date.	Tank.	Location.	Barrels.
June 1	298	Karns City	22,636
June 21	1,423	Colegrove	34,627
Sept. 10	847	Olean	27,695
Dec. 26	1,611 1,612	West Junction	56,091
Total			141,049

EXPORTS FROM THE UNITED STATES.

		GALLONS.
Total exports from United States, Refined, Etc.	1884,	526,444,163
" " " "	1883,	514,002,338
Total Increase Gallons,		12,441,825
Average Daily Increase, Gallons,		33,994

WELLS COMPLETED.

	1884 Productive.	1884 Dry.	1884 Total.	1883 Productive.	1883 Dry.	1883 Total.
January	197	19	216	113	12	125
February	241	18	259	108	23	131
March	262	20	282	131	10	141
April	282	22	304	189	23	212
May	286	29	315	212	17	229
June	240	28	268	203	17	220
July	160	28	188	232	20	252
August	128	21	149	289	27	316
September	75	15	90	313	21	334
October	63	16	79	298	26	324
November	63	23	86	316	15	331
December	58	15	73	250	21	271
Total	2,055	254	2,309	2,654	232	2.886
" 1884,				2,055	254	2,309
Difference,				599	22	577

THE CRUDE MARKET.

	1884 Highest.	1884 Lowest.	1884 Fluctuation.	1884 Average.	1883 Highest.	1883 Lowest.	1883 Fluctuation.	1883 Average.
Jan.	115¾	106⅞	8⅞	111⅓	106¼	83½	22¾	92¾
Feb.	110⅞	98⅛	12¾	104⅜	104⅞	96⅜	8¼	101
Mar.	106⅝	92⅞	13¾	100⅛	110	86	24	97½
Apr.	99	90¼	8¾	94	96⅛	84¾	11⅜	92⅝
May.	103½	66	37½	85½	120	89⅜	30⅝	99⅜
June.	79	51	28	68¾	125	109¾	15¼	117¼
July.	75	57½	17½	63½	116⅜	97⅜	19	108
Aug.	93½	73	20½	81¼	113¼	105¼	8	108¾
Sept.	92¼	70½	21¾	78	116½	106⅞	9⅝	112½
Oct.	81¾	59⅝	22⅛	71	115⅞	107⅞	8	111⅛
Nov.	79¾	67⅝	12⅛	72½	120	108⅞	11⅛	114¾
Dec.	80⅝	67¾	12⅞	74⅛	117¼	112⅜	4⅞	114¼
For								
1884.	115¾	51	64¾	83¾				
1883.	125	84¾	40¼	105¾				
1882.	135	49¼	85¾	78¾				
1881.	100¼	72	28½	85				
1880.	124⅜	70⅝	53¾	94				

PIPE LINE RUNS BY FIELDS.

FIELD.	Total Runs 1884.	Daily Average 1884.	Daily Average 1883.
Bradford	12,096,950	33,052	34,181
Allegany,	3,903,594	10,665	12,931
Cherry Grove,	264'942	724	2,070
Cooper,	1,004,849	2,745	3.001
Balltown,	807,506	2,206	2,127
Wardwell 9 mos.,	701,226	2,550	—
Baldridge 9 mos.,	962.801	3,501	—
Other Fields,	3,842,992	8,996	12,493
Total	23,584,860	64,439	66,803

The statistical history of the year 1884 may be briefly summed up as follows:

1. The net stocks in the region were increased during the year 1,157,327, equal to a daily average of 3,162 barrels.

2. The Pipe Line runs decreased at the rate of 2,364 barrels a day.

3. The shipments from the region averaged 4,026 barrels per diem more than during the preceding year.

4. The exports of petroleum increased at the rate of 33,994 gallons a day.

5. There were 599 fewer productive wells completed in 1884 than in 1883, and the number of dry holes drilled was 22 in excess of the number drilled during 1883.

6. The highest price of oil certificates in 1884 was 9¼ cents below the highest price in 1883, and the price fell lower by 33¾ cents than the lowest price of the preceding year.

7. The average price for 1884 was 22 cents less than the average price for 1883.

8. Of the total amount of oil produced in 1884, the Bradford field is credited with 51 per cent., Allegany with 12 per cent., while all the other fields and districts produced but 37 per cent.

FIELD OPERATIONS—1884.

DISTRICT.	Wells Completed.	Production.	Dry	New rigs	Old Rigs	Drilling	Total
		JANUARY.			February 1, 1884.		
Allegany	66	558	4	57	55	74	186
Bradford	69	628	0	71	24	89	184
Warren and Forest	45	1246	8	70	11	66	147
Lower Country	36	707	7	17	9	37	63
Total	216	3139	19	215	99	266	580
		FEBRUARY.			March 1, 1884.		
Allegany	76	645	6	55	50	69	174
Bradford	76	695	1	80	21	96	197
Warren and Forest	70	2149	6	44	23	80	147
Lower Country	37	350	5	23	11	43	77
Total	259	3839	18	202	105	288	595
		MARCH.			April 1, 1884.		
Allegany	68	576	1	64	46	74	184
Bradford	87	769	0	86	20	94	200
Warren and Forest	86	1735	10	76	15	73	164
Lower Country	41	379	9	14	10	38	62
Total	282	3459	20	240	91	279	610
		APRIL.			May 1, 1884.		
Allegany	78	631	6	47	49	71	167
Bradford	105	970	2	66	33	76	175
Warren and Forest	85	1120	9	60	17	87	164
Lower Country	36	654	5	24	4	44	72
Total	304	3375	22	197	103	278	578
		MAY.			June 1, 1884		
Allegany	80	681	5	35	48	51	134
Bradford	91	936	4	50	42	66	158
Warren and Forest	98	1532	12	70	21	82	173
Lower Country	46	1092	8	10	5	55	70
Total	315	4241	29	165	116	254	535
		JUNE.			July 1, 1884.		
Allegany	55	442	4	18	57	31	106
Bradford	76	885	4	20	56	40	116
Warren and Forest	95	2567	14	24	39	56	119
Lower Country	42	481	6	8	6	44	58
Total	268	4375	28	70	158	171	399
		JULY.			August 1, 1884.		
Allegany	28	205	4	6	67	14	87
Bradford	31	451	2	6	65	25	96
Warren and Forest	90	8114	12	22	43	61	126
Lower Country	39	690	10	7	9	29	45
Total	188	9460	28	41	184	129	354
		AUGUST.			September 1, 1884.		
Allegany	16	116	2	8	62	9	79
Bradford	27	351	3	3	61	12	76
Warren and Forest	79	2606	12	27	36	44	107
Lower Country	27	314	4	15	11	24	50
Total	149	3387	21	53	170	89	312
		SEPTEMBER			October 1, 1884.		
Allegany	7	58	0	6	63	12	81
Bradfo d	11	171	1	4	59	8	71
Warren and Forest	48	801	10	20	40	25	85
Lower Country	24	2480	4	22	11	43	76
Total	90	3510	15	52	173	88	313
		OCTOBER.			November 1, 1884.		
Allegany	9	70	2	4	61	12	77
Bradford	11	134	1	6	59	10	75
Warren and Forest	30	215	7	11	36	24	71
Lower Country	29	9632	6	11	12	55	78
Total	79	10051	16	32	168	101	301
		NOVEMBER.			December 1, 1884.		
Allegany	11	49	4	4	60	11	75
Bradford	10	231	1	8	56	9	73
Warren and Forest	27	76	15	9	40	21	70
Lower Country	38	6421	3	12	6	44	62
Total	86	6777	23	33	162	85	280
		DECEMBER.			January 1, 1885.		
Allegany	7	18	3	5	59	16	80
Bradford	7	45	1	1	60	14	75
Warren and Forest	25	118	6	11	38	15	64
Lower Country	34	5415	5	37	4	56	97
Total	73	5596	15	54	161	101	316

DECEMBER PRODUCTION REPORT.

Reports from 6,126 Bradford wells, showed an average decrease of 2.6 barrels to the well, during December.

Time.	No. Wells.	Gross Stocks.	Average per Well.
December 1, 1884	6,126	364,938	59.6
January 1, 1885	6,123	349,056	57.0
Difference,	3	15,882	2.6

The number of wells in the Bradford field connected with the pipe lines on the 1st of January, is estimated at 13,342. Estimating the entire Bradford region on the basis of 2.6 barrels decrease, the total decrease in stocks at wells during December, was 34,589 barrels, a daily average of 1,116 barrels. Subtracting the decrease in stocks from the total runs as reported by the National Transit and Tidewater pipe lines, Bradford's daily average production for December is as follows:

	Barrels.
Average Daily Pipe Line Runs	30,632
Average Daily decrease of Stocks at Wells	1,116
Bradford's Dec. production, est.	29,516
do Nov. do do	31,789
Average daily decrease	2,273

This represents an average decrease of 2,273 barrels a day as compared with the November estimate.

THE ALLEGANY FIELD.

The stock reports of the Allegany field are summarized as follows:

Date.	No. Wells.	Gross Stocks.	Average per Well.
December 1, 1884	1,190	51,336	43.1
January 1, 1885	1,195	51,153	42.8
Difference	5	183	.3

The wells from which reports were received, evince a decrease of three-tenths barrels to the well, but this difference is too small to materially affect the runs as reported by the two pipe lines, and the average daily runs for December may be considered to represent the average daily production. The runs were 8,193 barrels a day, and placing the estimated production at that figure, gives an average decrease of 449 barrels a day from the preceding month.

WARREN, FOREST AND LOWER COUNTRY.

Reports were received from groups of wells in the different sections of Warren, Forest and the Lower Country. The number of wells on the first of each month, with their averages, are contained in the following statement:

Field.	No. Wells. Dec. 1.	No. Wells. Jan. 1.	Average per Well. Dec. 1.	Average per Well Jan 1.
Clarendon & Tiona	140	139	53	52
Cherry Grove	49	49	88	102
Cooper District	177	175	104	91
Lower Country	104	106	105	107
Miscellaneous	144	144	141	154

Accepting the outside runs, which are partially made up of the Wardwell and Baldridge runs, as representing the production, an estimate on the yield of the field for November and December would be as follows:

Field.	Dec. Barrels.	Nov. Barrels.
Allegany	8,193	8,642
Bradford	29,516	31,789
Outside runs	22,918	23,557
Total	60,627	63,988

The above figures show a decrease in the production of 3,361 barrels a day. In these estimates no account is taken of the "dump oil" loaded on the cars direct from the wells at Emlenton and other points along the Allegheny river.

The runs from the Baldridge field decreased at the rate of 763 barrels a day in December During the same period, the Wardwell runs declined 367 barrels, and Cherry Grove, Cooper and Balltown declined 284 barrels per diem.

The following table shows the comparative production for 1883 and 1884. No production reports of the field were published during the first six months of 1883, and the pipe line runs of Bradford and Allegany, are considered sufficient in the absence of more reliable data:

	Bradford		Allegany		Outside Runs		Total Prod.	
	1884.	1883.	1884.	1883.	1884.	1883.	1884.	1883.
Jan.	31,806	36,847	11,263	14,106	16,140	14,172	59,209	65,125
Feb.	32,378	38,481	11,607	13,154	18,561	13,573	62,546	65,208
Mar.	31,912	37,754	11,768	12,619	19,764	14,031	63,444	64,404
April	32,442	38,810	11,848	13,742	19,162	16,655	63,452	69,207
May	339,22	39,039	11,547	13,793	19,549	16,613	65,018	69,445
June	33,753	35,279	11,108	13,499	19,977	18,330	64,838	67,108
July	34,031	34,537	11,218	12,345	20,870	16,758	66,119	63,640
Aug.	33,353	35,087	10,384	12,264	22,830	18,969	66,567	66,320
Sept.	32,976	34,965	9,877	12,335	22,514	17,958	65,367	65,258
Oct.	31,758	35,654	9,356	13,089	22,762	19,238	63,876	67,981
Nov.	31,789	35,026	8,642	12,678	23,557	18,433	63,988	66,137
Dec.	29,516	35,760	8,193	12,437	22,918	18,428	60,627	66,625

WELLS COMPLETED 1884.

	Allegany.		Bradford.		Warren & Forest.		Lower Country.		Grand Summary.	
	Total.	Dry.	Total	Dry.	Total.	Dry.	Total.	Dry.	Total.	Dry.
January	66	4	69	0	45	8	36	7	216	19
February	76	6	76	1	70	6	37	5	259	18
March	68	1	87	0	86	10	41	9	282	20
April	78	6	105	2	85	9	36	5	304	22
May	80	5	91	4	98	12	46	8	315	29
June	55	4	76	4	95	14	42	6	268	28
July	28	4	31	2	90	12	39	10	188	28
August	16	2	27	3	79	12	27	4	149	21
September	7	0	11	1	48	10	24	4	90	15
October	9	2	11	1	30	7	29	6	79	16
November	11	4	10	1	27	15	38	6	86	26
December	7	3	7	1	25	6	34	5	73	15
Total,	501	41	601	20	778	121	429	75	2,309	257

Total Wells Completed in	1884	2,309.	Total Dry		257
"	"	1883	2,886.	"	232
"	"	1882	3,269.	"	180
"	"	1881	3,848.	"	180
"	"	1880	4,194.	"	135
"	"	1879	2,889.	"	160
"	"	1878	3,018.	"	327
"	"	1877	3,954.	"	657

THE table of Petroleum Exports published in this number of the AGE, show a gain in the amount of petroleum exported from the United States, for the year 1884, of 12,441,825 gallons over the preceding year. New York City exported less oil in 1884 than in 1883, but the loss in amount of petroleum shipped from that port is more than made up by the gains at Philadelphia, Baltimore and Boston.

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